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ORIGINAL ARTICLES.

CONSTIPATION CONSIDERED FROM THE STANDPOINT OF THE PROCTOLOGIST.[1]

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IT has occurred to me that a subject as trite and homely as constipation should not be approached in this presence without an introductory word of apology and explanation. I have not presumed to think that I have anything particularly new to offer; even to the furthest details the subject has been canvassed by other and abler writers. But in spite of its volume this portion of our literature has impressed me chiefly by reason of the vagueness of conception and indefiniteness of expression which characterize it. If I shall be able to contribute anything to a clearer and more systematic view of the subject my purpose will be fully accomplished.

It is more than unfortunate that confusion should exist in reference to this affection. From the standpoint of frequency no pathologic condition in the whole range of human ailments occupies so conspicuous a position; and from the standpoint of the rectal surgeon none is of such fundamental and far-reaching importance. Yet strange to say, judging from their published works, more than one of our most distinguished modern specialists have regarded it only of sufficient moment to be accorded casual mention in the discussion of diseases directly traceable to it. This to me is an anomalous position. It is scarcely conceivable that a proctologist could fail to realize the importance of the subject. Nor is it possible that there could be a reasonable question as to its falling properly within his province. To one without the fold the inference might not seem wholly unjustifiable that at least one specialty in the great brotherhood of medicine thinks less of prevention than of cure.

Broadly speaking, constipation is a disease in which, either directly or indirectly, the entire organism is implicated. It would manifestly be impossible, therefore, to attempt its consideration in all its phases; nor, indeed, is it desirable to do so. But the subject as set forth in our title presents a less hopeless undertaking and will, I trust, permit the development of practical, underlying principles both in essay and discussion.

In order to gain an intelligent comprehension of our subject, several preliminary items seem to me worthy a word of mention. In the first place much of the confusion in reference to constipation doubtless springs from lack of definite idea as to what the term means. Neither hard stools, nor dry stools, nor other kind of stools constitutes the disease. These expressions are merely descriptive of physical properties, and costiveness embraces them all. Constipation is something other and more. Correctly speaking, it is the condition of which costiveness is merely a symptom. Costiveness is not necessarily a disease, constipation always is, and, though usually associated, the former may exist without the latter. Again, constipation is a relative term. The line between the physiologic and the pathologic is not clearly drawn, and remarkable differences in individual habits may not be incompatible with ordinary health. With one person two movements of the bowels a day may be the normal; with another one in two days. And cases are on record by reliable observers in which not only days but weeks and even months elapsed without an evacuation and still the patients lived and flourished. So that neither the character of the stools nor the intervals between them can be properly regarded distinctive of the disease.

What, then, is constipation? The definitions given by the lexicographers lack that precision which should proceed from clear-cut ideas on the subject. In all I have consulted costiveness and infrequency of passages are employed as synonymous terms. If my conception of the disease is the true one, constipation may be broadly defined as *a diseased condition of the alimentary canal characterized by a modification of function which results in the pathologic retention of fecal matter*. With this definition for a foundation let us take a brief glance at the general subject, with reference especially to etiology. The causes of constipation may be conveniently arranged under separate headings, though it is to be understood that several, or possibly all, may be operative in any given case.

First. Causes springing from the violation of hygienic law. Under this head would come errors of diet and improper habits of life, to one or both of

[1] Read at the first annual meeting of the American Proctologic Society, held at Columbus, Ohio, June 7, 1899.

which sources, without a doubt, a large proportion of all cases may be traced. Chiefly notable in regard to diet are the two opposite extremes of habitually consuming food which leaves too much or too little residue. Evil results equally from both. Peristalsis is largely dependent on the mechanical irritation of the bowel contents. In the one case this would be interfered with by over-distention from the excessive accumulation of refuse material; in the other the requisite amount would be lacking. Many articles of diet have in themselves a constipating tendency. This applies more particularly, perhaps, to beverages of which tea and alcoholics are familiar examples.

In reference to habits of life, much of the greatest practical importance might be said. The significance of this factor in the production of constipation can scarcely be estimated. Yet it is a very open question whether it is fully appreciated even by the profession. The expression of the old physician to the effect that if his bowels moved naturally in the morning he felt sure he would not die that day, contains the germ of a profound truth. In the hurry and turmoil of modern life, particularly in the large centers, the attention to this function is made a matter of convenience and disease is the harvest of neglect.

Second. Defective innervation. This expresses itself either in (*a*) atonicity of the muscular coats of the intestines resulting in impairment of peristalsis; or (*b*) in decreased secretion. These conditions usually coexist and may be primary or consecutive. If the former, the constipation develops because of them. If the latter, they develop because of the already existing disease. The largest group of cases exemplifying these conditions is probably to be found in those of sedentary habits. The explanation is obvious. Paralysis is responsible for a smaller but more hopeless class of cases. In the first-mentioned class the origin of the trouble is purely functional, in the latter organic, yet the phenomena presented are identical in nature and the pathology involved different only in degree. Though mentioned as a separate cause, and rightly so, it is evident that defective innervation may be merely an effect of other causes. In fact, however brought about, it is a condition which may be said to exist to some extent in practically every case.

Third. Closely allied to the preceding, but entitled to separate classification, is the sluggishness of bowel function, often amounting to true constipation, met with in many diseased and debilitated states of the general health. Of these, anemia, laxness of the abdominal walls, obesity, diabetes, and great bodily weakness from any cause may be cited.

Fourth. A more obvious and familiar cause of constipation consists in the habitual use of purgative medicines. The pernicious effect of this practice requires no explanation nor emphasis. Yet its prevalence, already alarmingly widespread, is increasing at a rate which bids fair soon to make it universal. Fostered and encouraged by conscienceless advertisers, it belongs to the large and growing class of evils for which a venal press is responsible and for the suppression of which active measures are urgently demanded. Full redress is hardly possible short of legislative enactment. But the medical profession, by recognizing its duty and aggressively facing it could accomplish much. Bringing the issue nearer home, the proctologist, from the nature of his calling, is confronted by an obligation even greater. And that spirit of broad philanthropy which is the mark of the true physician demands of him all the labor and all the sacrifice that would be entailed by active warfare against this evil.

Fifth. Mechanical obstruction. This may occur at any point in the intestinal tract and vary widely both in pathology and degree. Though constipation is usually present, obstipation is the term more exactly descriptive of the resulting condition. Of the many causes operative under this head I stop for a word of comment upon only one. That true valves are present in the normal rectum modern investigation has left little room to doubt. But their significance as factors in the production of disease is only now being satisfactorily demonstrated. The ingenious methods employed and brilliant results obtained by Martin of Cleveland, in work along this line cannot fail to be convincing to those acquainted with them. Obstipation and hypertrophied valves are terms with which he has made us familiar. I have associated them in this connection in order to impress their relation and emphasize a fact. Other causes of mechanical obstruction, malformations, stricture, etc., readily suggest themselves, but must be passed with the mere allusion.

Sixth. Finally, in reference to etiology, I merely mention painful affections of the anus. This cause will be elaborated in the context.

Now to come to questions more immediately concerned in our present purpose. From the point of view of the proctologist this subject is of peculiar interest. The relations between constipation and diseases of the rectum are not only intimate but especially noteworthy in that either may be cause, effect, or both with reference to the other. I know of no other conditions in which such relationship is so clearly marked and so frequently manifest. With respect to rectal diseases, it is a rule to which there are no exceptions that every lesion in the entire

category may either be caused or seriously modified by constipation. With respect to constipation, though perhaps not so generally recognized, it is clearly demonstrable that rectal disease often stands to it in the light of causative factor. And either effect, once established, reacts powerfully and positively in intensifying the very condition which gave rise to it.

Considering constipation first in the active or causal rôle, the propositions stated are easy of verification. That venous congestion is the great underlying factor in the production of rectal diseases those who have given serious thought to the question will require no proof. The anatomical position and structure of the rectum, together with its peculiar function, render this to a greater or less extent its normal condition. Constipation augments it. A collection of feces in the colon or sigmoid acts as an impediment to the return blood current; and the dislodgment and extrusion of such accumulation, requiring as it does the cooperation of the powerful abdominal muscles, must result in converting passive into very active congestion, at the same time furnishing ready means for the infliction of traumatism. If the fecal mass, itself normally of firm consistence and more or less nodulated, contains a projecting foreign body, injury must attend its passage. Fissure, hemorrhoids, prolapsus, proctitis, ulceration, abscess and fistula are the more conspicuous lesions which may be traced directly to constipation and its coincident phenomena.

The present unsettled state of our knowledge as to the etiology of malignant growths permits no definite assertion in this connection. But discriminating observation with reference to their favorite sites justifies the assumption that mechanical irritation is a factor both constant and weighty. Statistics show that some 3 per cent. of all cases of cancer are located in the rectum. If friction may be admitted as a causative agency, the function of this organ, particularly when it has to do with costive stools, would render it an ideal situation for the development of this disease and the wonder is that the proportion is not even greater. To place malignant growths, therefore, in the list of rectal diseases for which constipation is, in a sense at least, responsible seems to be entirely in keeping with the most advanced thought upon the subject. The analogous nature of the gross lesions resulting from syphilitic and tubercular deposits in this locality would warrant a similar deduction in regard to them. But, attractive though the question is, it must be passed with these few comments.

Turning now to rectal diseases as a cause of constipation, two considerations under this head are worthy of special note. The first is pain. In those lesions situated about the extremity of the rectum pain is practically always a prominent symptom, and the passage of a stool of even normal size and consistence is an event contemplated with reluctance and dread. Remembering that defecation is in large measure a voluntary process, this is an item of greater import than might at first sight appear; and, while applicable, perhaps, with special force to children, so long as human nature shrinks from suffering, painful affections of the rectum and anus must be recognized in the etiology of this disease.

The second consideration is the influence of the reflexes from rectal lesions in the production of constipation. Here we enter upon less certain ground. Much is surmised, but very little really known about reflexes. Theories innumerable have been and are being advanced until it almost seems that every phenomenon not otherwise explicable is to be laid at their door. This tendency has worked to the disrepute of an etiological element which, though little understood, is yet both potent and pronounced. General discussion of the subject could scarcely be undertaken within the proper limits of a separate paper. But a few practical remarks with regard to the mechanism and manifestations of rectal reflexes seem absolutely necessary to elucidation of the idea before us.

The pouch of the rectum derives its chief nerve supply from the sympathetic system through the pelvic plexuses; the portion embraced by the sphincter muscles and the tissues of the anus almost entirely from the cerebrospinal system through the fourth sacral and internal pudic nerves. The former system, presiding over the functions of organic life, has to do largely with secretion and involuntary motion; the latter with the functions of animal life, sensation and voluntary motion. Whether the same is true of other localities or not, my observation has convinced me that rectal reflexes conform to at least one general rule, namely, that the reflex is expressed through the same system as that involved at the point of origin; in other words, that there is no transference of nerve impulse from sympathetic to cerebrospinal, and vice versa. So that a reflex originating in the sympathetic area, if referred to the intestinal tract, would express itself either in stimulation of the secretory apparatus or in increased peristalsis. Laxness would be the natural consequence.

On the other hand, a reflex originating in exposure or irritation of a nerve-fiber in the anal canal would manifest itself either in pathologic sensation, *i. e.*, pain, or in stimulation of a voluntary muscle. The latter is the point to which I would call special at-

tention. Any lesion of the terminal portion of the bowel, such, for instance, as a fissure or inflamed hemorrhoids, supplies the occasion of the reflex and the external sphincter is generally the muscle upon which it expends itself. The effect, if long continued, is irritability and hypertrophy of that muscle. When this occurs a mechanical impediment to defecation has been established and a condition of costiveness eventually merging into true constipation ensues.

Another cause for this condition of the sphincter and one more frequently in evidence, is neglect. When in response to peristalsis the fecal matter leaves the sigmoid and descends into the rectum a certain amount of irritation is excited by its presence and desire to go to stool is felt. The only barriers to immediate passage are the sphincter muscles by means of which Nature and the will operate to the welfare of the individual and in the interest of society. If the inclination is resisted, the feces are returned to their normal receptacle in the sigmoid flexure and the desire passes off not to return, most probably, for twenty-four hours. But as the accumulation increases from day to day reverse peristalsis does its work less perfectly and a portion of the feces remains in the rectum, where it becomes dry and hard from the absorption of its liquid contents and, impinging upon the delicate and sensitive mucosa covering the sphincters, excites these muscles to a state of chronic reflex contraction. In this way, just as from pain ful lesions of the anus, a condition of irritability and hypertrophy is produced. This is a cause of constipation which I am persuaded is not duly appreciated. Neglect, costiveness, hypertrophied sphincter, constipation is a sequence of events which obtains, doubtless, in many cases. And intelligent working comprehension of the subject requires that the process be recognized and each factor taken into account.

Before leaving the reflexes, as pertinent to the subject, I mention without comment the unique and rather remarkable experience of a prominent Nashville physician who has reported a number of cases of chronic constipation due to eye-strain and relieved by properly adjusted lenses.

The symptoms and diagnosis of constipation need no discussion before this body. One point, however, will bear mention for the sake of the emphasis it merits. Causes outside the rectum may beyond question be productive of the disease. But the effects of the disease itself are often such as to cloud its etiology by simulating other affections. Thus, auto-infection is probably in many cases responsible for the hepatic derangement, debility, defective innervation, etc., to which the constipation is credited. Therefore, the position cannot be considered an extreme one that this class of cases should without exception be subjected to thorough rectal examination.

The treatment of constipation might well afford the theme for a separate essay. Here I cannot hope to do more than indicate principles. Considering first the general subject, the essentials may be very concisely stated: If the diet is at fault, correct it. If the habits of life are improper, let them be modified. When these fundamentals have received attention medication may be thought of. Purgatives naturally suggest themselves first in this connection. Their proper field of application is a very limited one. It may be tersely stated: In the beginning to relieve the costive condition; afterward only when necessary for the same purpose. It is always to be borne in mind that purgatives as a class have proper reference only to the symptom, costiveness.

When the cause can be traced to defective innervation two principal indications are to be met in the treatment: First, reestablishment of the intestinal secretions; second, restoration of the muscular tone. For these purposes a great variety of therapeutic agents are at command. Wisely selected medicines are useful but not to be exclusively relied upon. In conjunction with them the various non-medicinal agencies, such as methodical exercise, massage, and electricity are to be borne in mind and employed as indicated. Of course the general health will be looked after by the astute physician and any dyscrasia or cachexia receive due attention.

In the treatment of constipation resulting from rectal diseases, we have as the first indication, removal of the cause. But I wish especially to emphasize that this will not often be effective unless at the same time dilatation of the sphincters is practised. In no other way can the irritability and hypertrophy nearly always present be overcome. And, if this condition is not overcome, no line of treatment, however scientific and however faithfully applied, is likely to prove of more than temporary benefit. Fortunately, in the modern treatment of most rectal lesions dilatation, incidental or by design, is a routine preliminary; and to this fact unquestionably the great and lasting relief of the constipation which all of us have observed following operations, is in large measure attributable.

In conclusion, I wish to state my conviction that in a proportion of cases so large that I shall not venture to name it, constipation either originates in or is maintained by causes located in the distal ten inches of the intestinal tract. If I am correct in this, the notorious inadequacy of ordinary treatment is at once accounted for, and the duty of the proctologist in the premises becomes obvious.

ASTHENOPIC SYMPTOMS AND HEADACHE CAUSED BY THE MORE COMMON FORMS OF INTRANASAL DISEASE.[1]

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HEADACHE, from whatever cause it may arise, is one of the most frequent complaints with which the physician has to deal. It would certainly seem that more people suffer from this disease than formerly, or that they are less willing to bear the pain. The amount of headache medicine sold by druggists is something enormous, and the number of pairs of glasses worn to relieve headache is past finding out. Still the number of patients who suffer from this pain is steadily on the increase, and one patient relieved by any procedure brings many others, some of whom are relieved while others are not. Of the many causes which may produce the pain we have been inclined to think refractive errors the chief. This belief has arisen in part because our attention has been so often called to the part that such errors play in the production of headache, and in part by the brilliant cures that have been accomplished by the wearing of glasses. We have come almost to believe that all headaches as well as most other nervous diseases are caused by errors of refraction or muscular unbalance. The brilliant results I do not deny and I have had some as miraculous as any, but I do believe that the patients who can be relieved of pain or other obscure nervous symptoms by the glasses that are often prescribed need to have their nervous system reconstructed from the foundation. That we often overlook other causes in our zeal to find some ocular error which might produce the pain no one will deny, and I wish to call your attention to a few cases in which intranasal disease so closely simulated eye disease as to be very misleading. These cases illustrate the effect of the more common forms of intranasal diseases exclusive of diseases of the accessory sinuses.

CASE I.—Mrs. D., aged thirty-five years, consulted me in May, 1894. Her family history was good and the patient was well nourished and looked to be in good health. She complained of pain in the eyes and across the forehead, worse after using the eyes for near work. She was firmly convinced that the headache was due to the eyes. Tests showed vision in each eye to be normal. Muscular tests showed 6° manifest exophoria. She also had chronic hypertrophic rhinitis. The lower turbinates were considerably enlarged, but did not touch the septum.

She was anxious to have glasses as she was about to make her annual visit to her old home and she always suffered greatly during the railway journey of 500 miles. One statement that she made at her first visit was rather puzzling at the time, namely, that she suffered very much in making the journey out, but that on her return, six or eight weeks later, she was nearly free from discomfort. I satisfied both myself and my patient by supposing that the prolonged rest which she had enjoyed in the country had caused the change for the better. Prisms of 2° before each eye were ordered and on her return she reported that the glasses gave great relief during the first two or three weeks, but that latterly she had been unable to wear them at all. On examination the exophoria was found to have disappeared, and as she then did not need glasses she was advised to wear none.

This was in August, 1894. In November of the same year she called on me again, complaining of all the old symptoms. I then advised her to have the chronic rhinitis treated as the nasal condition was much worse than when I saw her in August. She came a few times for treatment and then ceased her visits and I did not see her again for two years. On her return in 1896 she had a long story to tell, the principal points being that she had given up the treatment of the chronic rhinitis by the advice of her family physician, who assured her that it could not be cured, and that her headaches were caused by cervical catarrh, which could be cured. I asked her if the cervical catarrh had been cured and she promptly and emphatically replied "no." She had consulted two other oculists and they had both advised partial tenotomy of the external recti. She had discovered that her eyes gave her trouble only in the fall and spring, during the period when her chronic rhinitis was worse and she was practically free from headache during the rest of the year. She is still in the same condition as she felt that she could not afford to continue treatment.

I have reported this case somewhat at length because it was so misleading not only to me but to others, and also for the light that it throws on many obscure cases of frontal headache, caused seemingly by muscular imbalance. I make it an invariable rule to examine the nose in cases of muscular insufficiency and it has proved a very satisfactory practice to me, and I have the records of many cases in which the patient has escaped the annoyance of wearing glasses by intranasal treatment.

CASE II.—A physician, aged thirty-three years. Family history good. He first came to me in 1895 suffering from hay fever. He had enlarged lower turbinates which touched the septum. He had also chronic ethmoiditis on the left side of many years' standing. He told me that he had had frontal headache during some part of every day for ten years and that he had often been confined to his room for several days at a time with excruciating pain over the eyes. To use his own expression he had taken everything that had been prescribed for him, from aconitia to Rochelle salts, and knew of nothing that

[1] Read before the Section on Laryngology of the American Medical Association at Columbus, Ohio, June 8, 1899.

had relieved him. He further added that during all this time no one had ever examined his nose.

His hay fever was easily controlled and later, during the fall, the lower turbinates were thoroughly cauterized. As soon as the burns were healed his headaches vanished and have not since returned. The ethmoiditis still continues but it is much better by reason of the better drainage.

It may be claimed that the pain in this case was due to the ethmoiditis, but it should not be forgotten that the ethmoiditis was one-sided and that the pain was as often on one side as the other, and that the pain was quickly relieved by the cauterization, while the ethmoiditis still exists after four years of improved drainage.

Another very common form of intranasal disease which causes headache is acute ethmoiditis. It is very often the case that an attack of acute rhinitis involves the anterior ethmoid cells and the inflammation remains in the cells for some time after the general attack has ceased. When these cells are involved the patient suffers from pain in and around the eye, which is often severe. The pain is so persistent and intense that the attending physician and the patient are fully persuaded that there is some serious disease of the eye. The following case is very characteristic of a large group:

CASE III.—Mr. P., aged forty-three years, suffered from an attack of grip with a good deal of inflammation of the mucous membrane of the respiratory tract. During convalescence he complained of pain in the right frontal region, and around and in the right eye. I saw him in consultation and found the eye free from inflammation, pupil normal, and tension not raised. On examination of the nose the left side was found free from disease. On the right side the anterior ethmoid cells were inflamed and the mucous membrane covering the middle turbinate was red, swollen, and covered with a thin watery discharge. A spray containing cocain relieved the pain and swelling, and under measures directed to the relief of the ethmoiditis he made a good recovery.

This case is reported simply as a type of a very common affection. Often the diagnosis is far from easy, but an inspection of the nasal cavities under good illumination cannot fail to be an aid in clearing up the nature of the case.

Many patients have headache from a form of chronic rhinitis in which the discharge is not abundant, but rather viscid with a tendency to dry on the surface of the mucous membrane. The nasal breathing is not much obstructed except by the crusts, but the patients complain of a dull feeling of distress and discomfort across the bridge of the nose, extending upward across the brows, and at times giving rise to decided pain in the eyes. This condition of the nasal mucous membrane is distinctly different from atrophic rhinitis, but it is rather closely associated with uricacidemia and is often made worse by high living. I have seen many cases in which overindulgence in rich food made the nasal obstruction much worse in a few hours, and this result was so sure to follow any excess that the patients expected it. Measures directed to the systemic condition and regulation of the diet help these patients, but it is often necessary to treat the nasal disease by local applications.

Another form of intranasal disease that causes almost daily headache is hypertrophy of the posterior third of the middle turbinate. It is not at all a rare condition. The middle turbinate may touch the septum or approach it so closely that the narrow orifice is easily occluded by the congestion of the mucous membrane that follows any slight irritation. The headache from this condition is persistent and often severe and is only relieved by the removal of enough of the bony framework of the middle turbinate to provide a good space between that body and the septum. This operation quickly, and I believe permanently, cures the pain.

In this paper I have not attempted to discuss all the intranasal diseases which may cause headache, but have briefly alluded to some which seem to me to deserve more attention than they usually receive. I have no theory to offer to explain the production of headache by intranasal disease, but prefer to report the conditions as I have found them. At some future time we may be able to give a rational explanation of the connection between intranasal disease and headache, but as yet our knowledge of the subject is too incomplete to justify us in the indulgence of theories.

In conclusion I wish to emphasize the following points: First, headache may be and often is caused by intranasal disease; second, other disease aside from atrophic rhinitis, nasopharyngitis, affections of the accessory sinuses or the obstructive intranasal conditions may be the cause of headache; third, an examination of a patient suffering from headache is not complete unless the condition of the nasal cavities has been investigated.

THE INFRAPUBIC ROUTE IN SURGERY OF THE UTERUS AND ITS ADNEXA.[1]

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FOUR years ago when Drs. Jacobs, Henrotin, and I read papers before this society in Baltimore, upon surgery of the uterus and its adnexa per vaginam,

[1] Read at the twenty-fourth annual meeting of the American Gynecological Society, held at Philadelphia, May 23, 24, and 25, 1899.

the subject was so thoroughly discussed by the Fellows, and all questions in favor of the infra- and suprapubic methods of dealing with diseases of these structures were so carefully considered, that I then believed there would practically be unanimity of opinion as to what cases should be assigned to each of these methods. I find, however, that notwithstanding the fact that this question has since then engaged the attention of the best specialists in this country and abroad, we are but little nearer a consensus of opinion than we were before that meeting, and the arguments against the vaginal method presented and answered upon that occasion are to-day urged with the same earnestness and honesty, although the experience of many men has demonstrated that facts do not justify such objections.

It will not be claimed that there are no diseases of the uterus or the pelvic structures that cannot be successfully treated by either the supra- or the infrapubic method, but nearly every objection to the latter is the result of a lack of observation or experience. I have recently read with no little degree of surprise arguments against vaginal hysterectomy in the discussion of a paper before a medical society in Philadelphia. Were not these men representative abdominal and pelvic surgeons I would not feel inclined to refer to their objections, for I would imagine that such opinions were unusual. This discussion leaves the conviction that many surgeons have not carefully studied the technic of hysterectomy, etc., per vaginam, but reproduce the theoretical arguments against such surgery that were advanced by the great surgeons of Paris in their opposition to the late Peán when he first emphasized his success in this kind of work. If we will read the arguments of the men at that time, and then the discussions against the vaginal method offered now, we will see the striking similarity and the same evidence of the theoretical character. But I dare say that had all our American surgeons practically tested this method, as did Segónd, Richelot, Pozzi, and others, they would have changed their opinions just as these men did, and would have learned that the objections they had supposed to exist are not real.

An experienced surgeon by the infrapubic route is surprised at surgeons who oppose this method because of their repeated insistence that by the abdominal route one can see the structures with which he deals, but cannot see the structures encountered by the vaginal route, for they have neither performed the operation correctly nor seen it correctly performed. Any person who has often operated by both methods will tell you that, with few exceptions, nearly every structure treated from below is brought in view before the knife or the scissors is applied; and even in enucleation of pus tubes and ovaries, if we first bisect the uterus the eye can guide the finger as well as by any other method, and the finger can explore to the pelvic brim with its trained sense of touch. Nor will the statement that we must necessarily wound the intestines in infrapubic operations more frequently than in suprapubic operations bear the test of intelligent experience.

I have performed vaginal hysterectomy since 1888, and during the last few years have treated every diseased condition of the pelvis by this method, when indicated, if the consent of the patient could be obtained. During these eleven years I have never wounded the bowel or ureter; but I have wounded the bowel several times in performing abdominal section. I claim no special excellence of technic in avoiding injury to these structures, but contend that every well-trained surgeon can obtain the same degree of perfection in results if he will persist in his efforts.

One thing that may have prevented the more general adoption of the vaginal method, and may have caused people to oppose it, is the belief that the technic is so complicated that it is difficult to do the work without committing the sins above mentioned. I can understand why this belief exists to a greater extent than otherwise, in that too many surgeons use an unnecessary multiplicity of instruments, and especially of retractors, because these appliances, with few exceptions, are of no practical use and often complicate the operation.

In my early hysterectomy operations I was prone to adopt the methods of my predecessors without considering whether there might probably be an improved technic in some details. In many cases in hysterectomy no retractor is needed, and seldom more than one, and by dispensing with them the operation may be performed more rapidly, more successfully, and with less danger of wounding adjacent organs, for the *fingers* are the best retractors that can be used. By this method, if we bisect the uterus there is usually no difficulty in seeing the tissues before the knife or the scissors is applied; but if we cannot the finger may be carried in advance of the cutting instruments, in contact with the uterus or diseased tissues, thereby preventing wounding the bladder, the intestines or the ureters. I have for several years observed this technic, and the more experience I have the more I feel justified in insisting upon its superiority. Every part of the vaginal wall and the cervix may often be exposed by the fingers and seen as plainly as tissues outside the body.

I can readily see that there may be an objection to vaginal hysterectomy in some instances, and also to dispensing with retractors, if the uterus is not bisected; and just here is an excuse for the opposition urged against vaginal hysterectomy by surgeons who tell us of the dangers of wounding vital structures. It is not possible to see all the tissues involved in removing pus-tubes and applying clamps if this is done before the uterus is bisected, because these structures are then high in the pelvis and mainly hidden from view. There is no danger, however, of wounding anything but the uterus during the process of bisection; and after the organ is divided each side may be separately pulled outside the vulva, adhesions treated as they present, and the broad ligament, including the ovaries and tubes, clamped externally from above, in full view. There is no danger of wounding the intestines in separating adhesions from the uterus, for it is exceptional that the bowel is firmly adherent to this organ, and if so, by hugging the uterus closely it is easily separated without danger of structural injury; and omental adhesions are of no consequence.

While I do not believe the uterus is an important organ after the removal of the ovaries and tubes, still there are many cases in which it might be well to leave it, or in which the patient will not consent to its removal, and her convalescence may not, because of this fact, be interfered with, and she may remain well. In these cases I have had but little difficulty in removing the ovaries and tubes through a vaginal incision into Douglas' pouch, going behind the ureters and the uterine arteries. If the incision is made close to the uterus no vaginal arterial branches will be wounded and hemorrhage will be of no consequence, nor will there usually be much trouble in separating adhesions and bringing the ovaries and tubes into the vagina. They can then be removed with almost as much perfection as they can through the abdominal wound.

In this operation retractors are absolutely in the way, and no one can do perfect work of this kind who continues their use. And in this connection we may show the fallacy in the arguments against the infrapubic method offered by persons who claim it is not conservative, for it is impossible to perform more conservative surgery upon any part of the body, or by any known method, where the operation could in any sense be considered a capital operation.

There is no danger in opening Douglas' pouch after the vagina has been made aseptic, and the uterus likewise, by thorough curettage, etc.; and when the ovaries and tubes are brought into the vagina, if not diseased, they may be returned without injury, but if diseased not enough to justify removal they may be treated by any approved method, returned to their place, and the vaginal incision immediately closed. The operation performed after this fashion is of so little significance that it is not more dangerous than the operation for curetting and for lacerated cervix, and the patient, having no elevation of temperature or rapidity of pulse, is able to leave her bed at any time the surgeon will permit her to do so.

If there is doubt as to whether the ovaries and tubes are diseased sufficiently to justify the removal of one or both adnexa we should first carefully examine these organs through an opening into Douglas' pouch, and if neither should be removed, or if one should be removed only, be governed by the indications.

Nothing more could be accomplished by the suprapubic method, and by that method the abdominal wound in itself should confine the patient to bed for not less than two weeks, and require an abdominal support for one year; and in the vaginal method of exploration there is no danger of hernia or post-operative intestinal adhesions, while there is danger in the abdominal method, whether any organs are removed or adhesions separated. This is proven by observation in operations for ventral hernia following celiotomy, and we are always watchful in our incision to prevent wounding an intestine adherent to the abdominal wound.

When but one ovary and tube should be removed, let it be as a result of any kind of injury—pyosalpinx, ovarian abscess, tuberculosis, extra-uterine pregnancy, etc.—the other side may serve just as useful purpose as before the operation, and many of these women have afterward borne children without trouble. While there may be a few cases where the operation could not be completed without hysterectomy or abdominal section, I have not met with such a case, and I have not performed the suprapubic operation for extra-uterine pregnancy for nearly four years, but have performed about thirty through the vagina, each patient making an uninterrupted recovery. When one or both of the adnexa are removed per vaginam the convalescence is so universally uninterrupted that we learn to believe that every patient will make a prompt recovery. Of course it would not be the correct thing to attempt to complete an operation for extra-uterine pregnancy in intraperitoneal rupture with a large accumulation of blood in the abdominal cavity that could not be drained away; but in this condition there are times when vaginal incision into Douglas' pouch, and clamping the tube at the point of rupture, may save the life of the woman by promptly controlling hemorrhage until she can be resuscitated sufficiently to

resist the dangers of a celiotomy. In some of these cases the shock is so great that an abdominal section cannot be performed until the patient rallies, and often just as the pulse begins to become well perceptible secondary bleeding may cause death. A clamp may be applied through the vaginal incision without the administration of chloroform if the patient is not able to take an anesthetic, and removed at the time of the celiotomy.

Having first insisted at the meeting in Baltimore that in operations per vaginam, when septic matter in the pelvis is held there by an over layer of intestines agglutinated by inflammatory exudations, that these adhesions should never be disturbed if it can be avoided, and that experience has taught that they usually cause no trouble, I will not dwell specially on that point to-day. Nature is always conservative, and in protecting the abdominal cavity from the poisons in the pelvis she usually does so after a systematic fashion that may cause no trouble if the adherent intestines are not separated, and this protecting roof should not be disturbed, either in vaginal incision or in vaginal hysterectomy. No experienced celiotomist will contend that it is not dangerous to remove a large accumulation of pus, hemmed in after this fashion, through the abdominal incision, for while it may be sterile in one instance it may be virulent in another, and we never know that we can positively prevent soiling the healthy peritoneum; but if we succeed in separating the adhesions without wounding an intestine or causing local or general sepsis, it is impossible to prevent post-operative irregular adhesions more dangerous to health and life than would have been the agglutinated intestines left undisturbed in an operation per vaginam. Patients in whom there is an extensive accumulation of pus, with tissues thoroughly septic and softened, may symptomatically recover by incision and drainage without the removal of any organs, and I have seen many of these who afterward did not complain of pelvic trouble. This is applicable in accumulations of pus following abortion or labor; but in cases of local sepsis at such times the formation of pus may be prevented by prompt vaginal incision, opening the folds of the broad ligament, or separating pelvic adhesions, and lightly packing with iodoform gauze, so as to separate and keep apart the infected surfaces. If these cases could be seen at the beginning of sepsis the results would be good, but unfortunately we are not often called until the disease has made too much headway and pus has accumulated.

In both vaginal hysterectomy and vaginal incision for removal of tubes and ovaries, or for other purposes, we should apply just as little gauze as will meet the demands, being careful to cover the ends of the clamps to protect the intestines against subsequent injury. Too much gauze packing is painful, keeps the vaginoperitoneal opening too widely distended, and does not drain well. But little iodoform gauze should be used, for it has often caused intoxication, and has occasionally caused death.

To insure perfect drainage it is best to place a gum tube in the vagina with the end in the lower part of the vaginal incision and against the gauze packing. The tube should be used until after the gauze has been removed, and until the opening between the vagina and peritoneum has closed so as to *positively* resist the passage of water in vaginal irrigation. I do not believe it is best to leave the gauze packing for a week or ten days, as has been done, but I remove it gradually, beginning on the third day and taking out the last piece on the fifth or sixth day.

I have never observed that the length of the vagina has been materially altered, or that the secretion has been especially interfered with. If an appendix is sufficiently diseased to justify its removal, then the direct symptoms will enable us to make a diagnosis and guide us in the selection of the best method in operating. The relatively delayed convalescence, the abdominal incision, and the danger of hernia must be accepted in a minor degree as objections to the suprapubic route in selecting that method instead of the infrapubic route.

THE SERUM-TREATMENT AND ITS RESULTS.

By HERMANN M. BIGGS, M.D.,
OF NEW YORK.

(Concluded from page 105.)

Pneumonia.—There is no disease, excepting possibly tuberculosis, which is more fatal and in which a specific preventative and curative method of treatment is more to be desired than in pneumonia. The records of the New York City Health Department show that the deaths ascribed to pneumonia of different varieties number on the average about 5000 a year and are only exceeded by those due to the tubercular diseases.

Since 1884, when A. Fränkel first separated the pneumococcus in fresh culture, numerous bacteriologists have endeavored to produce immunity against the processes caused by this organism. In animals many methods have been employed to obtain this result with varying success.

The technic of experimentation with the pneumococcus has always offered unusual bacteriological difficulties and these have deterred many experimentors and have no doubt delayed the accomplish-

ment of the desired result, but the stimulus given by the success in obtaining antitoxic serums for tetanus and diphtheria has induced in recent years renewed efforts to obtain a curative serum for pneumonia in man.

The Klemperer brothers in 1891 reported somewhat favorable results from the treatment of six cases of pneumonia by an antipneumotoxin precipitated from the blood of immune rabbits; Jansen later reported apparently favorable results in ten cases of pneumonia treated by the injection of the serum of immune rabbits, and in 1893 Lara and Botzolo recorded what they regarded as encouraging results. In 1896 DeRenzi recorded the results obtained from the treatment of ten cases of pneumonia with antitoxic serum, and while all recovered the author felt unwilling to say they might not have recovered without the use of the serum. In 1897 Weisbacker reported five cases treated by injections of serum obtained from patients convalescent from this disease, and while the objective symptoms do not seem to have been much affected by the treatment the subjective feeling of relief is said to have been marked in all and recovery in all occurred. Washburn immunized a pony and with the serum thus obtained treated two cases successfully. He describes a method for determining the antitoxic power of the serum employed. Parre reports the results of experiments made with serum obtained from an ass, a cow, and rabbits thus immunized, in which he found the serum of the ass most efficacious. He reported twenty-two cases of pneumonia treated with this serum, with two deaths, these two patients being practically moribund when the serum was administered. In a later article he states that he is using the serum systematically, and that when given in 50 c. c. doses early in the disease, crisis and recovery invariably followed.

Ughetti of the University of Cantania and Cantieri, Director of the Medical Clinic at Sienna, express favorable opinions as to the efficacy of the serum prepared by Parre, while Massolongo of Verona concludes a careful and minutely detailed report as follows: "My impression as to the value of the antipneumococcus serum is that it is more efficacious in the treatment of pneumonia than any other agent we possess. These first experiments of mine convince me that from the DeRenzi and Parre serum we can obtain a clearly defined action on the pneumonic process, which it influences directly." Nine other clinicians have recorded similar experiences during the last year and have communicated the results to the Sero-Therapeutic Institute at Naples, where the serum is prepared.

Some experiments instituted along this line in the laboratories of the Department of Health, while still incomplete, give encouragement to hope for ultimately successful results. It is undoubtedly possible to confer upon animals (horses being employed in these experiments) a high degree of immunity to virulent cultures of the pneumococcus and the serum derived from these animals in very small amounts will protect rabbits from many times a fatal dose, when administered before the inoculation of virulent cultures of pneumococcus. The controls invariably die from the injection of $\frac{1}{1000}$ part of the dose administered to the protected rabbits. A larger quantity of the serum is required to protect animals when the culture is administered at the same time or previous to the administration of the serum, but even then, if the administration of the serum is not delayed for too long a period, the rabbits still live.

The conditions obtaining in such experiments are quite unlike those ordinarily existing in pneumonia in the human being, as pneumococcus septicemia is ultimately produced by the inoculations and this does not occur, as a rule, in lobar pneumonia in human beings except in severe cases and late in the disease. The animals, in these experiments, which showed a general septicemia at the time of the administration of the serum invariably died, but lived longer than the controls. Those animals which did not show a general septicemia at the time of the serum injection have in part lived and in part died. Successive doses also seem sometimes to save animals which would otherwise have perished.

The practical results obtained in the treatment of pneumonia in the human being with this serum are indecisive. The experimental results, however, are striking and justify a hope that better results may be later obtained with improved methods, and a serum of higher grade.

It is undoubtedly important in this disease as in the other infectious diseases in which the serum treatment has been successfully employed, that the remedy should be administered at an early stage of the disease.

It seems quite within the range of possibility that the next great achievement of serum therapeutics will be in the production of an efficient antipneumococcus serum, and if this should be obtained all of the previous successes in this department of medicine would in practical importance be far surpassed.

Epidemic Cholera.—Encouraging results have been obtained in both the preventative and curative treatment of epidemic cholera. Extensive investigations were carried on by Haffkine under the supervision of the English Government in India, in regard to the use of preventive inoculations for cholera. More than 100,000 persons are reported to

have been subjected to these inoculations, the material used in them being the dead cultures of the cholera bacillus. The inoculations in themselves are harmless although they are followed by some local and general reaction, which is, however, of short duration. To confer complete immunity Haffkine's method requires two inoculations with an interval of about eight days between them.

The following may be considered as indicating fairly the general results obtained from these inoculations:

The managers of certain tea estates, among the coolies of which the inoculations were carried on, reported that out of 29,000 employed on the estates, 7507 had been subjected to the inoculations; among these 63 cases of cholera afterward occurred, with 28 deaths—the admissions thus being 8.39, and the death-rate 3.73 per 1000. Among 21,443 coolies not inoculated, in the same gardens, there were 260 admissions, with 150 deaths from cholera, showing an admission-rate of 12.13, and a death-rate of 7 per 1000, or about twice the rate among the inoculated. The majority of those inoculated were only subjected to one inoculation with the weaker virus, which according to Haffkine, gives only partial results. In a small set of experiments carried on by Surgeon Hare after Haffkine's departure, 196 out of 355 coolies on one estate were inoculated; 4 of the inoculated coolies were seized with cholera and died. Among those not inoculated there were 34 cases and 30 deaths during the same period. These figures give admission- and death-rate among the inoculated coolies as 20.4 per 1000, while among the non-inoculated coolies the admission-rate was 213.8, and the death-rate 188.7 per 1000. It is also reported that in a later series even better results were obtained.

As to the curative value of the anticholera serum we may refer to the experiments of Kitisato, which show that in the Hirdo Cholera Hospital the mortality from cholera was apparently reduced by 20 per cent. by the use of the serum, and that in early cases—that is, those treated within the first twelve hours of the disease, the mortality was reduced to about 14 per cent. instead of the average 70 per cent. among those treated in some other manner. Experimentally it has been shown that the serum protects guinea-pigs from the results of the inoculation of many times the fatal dose of a cholera culture, when injected simultaneously into the peritoneal cavity. When injected subcutaneously, somewhat larger quantities of serum were required to confer protection; but this was still obtained if the curative injection was not made too long after the infection.

Koch said to the writer two years ago, with relation to the protective inoculations against cholera, that he had no doubt that in any future outbreaks of cholera in Europe or in America the disease would be promptly controlled through the use of immunizing injections, and that a maritime quarantine against this disease would be no longer required, as persons exposed on shipboard would be immunized and thus protected.

Bubonic Plague.—Still more encouraging results have been obtained in the preventative and curative treatment of the bubonic plague. The method adopted in testing the treatment consisted in the selection of a group of persons living under similar conditions, inoculating a portion of this group and leaving the remainder uninoculated, and then noting the incidence of the disease in the two groups.

At Kirkee, where plague broke out among the artillery, an excellent opportunity with these conditions presented itself, and the results were as follows: Among 875 non-inoculated men there were 133 cases of plague with 102 deaths, while among 667 inoculated, there were 32 cases with 18 deaths. The figures are strikingly in favor of the inoculated, for if the inoculated had had proportionately the same number of deaths as the non-inoculated, they would have had 89 deaths instead of 18, a difference of 71 deaths, a reduction of nearly 80 per cent. In Damann the results were equally good. In this small town Haffkine inoculated altogether 2297 persons. Of 6933 persons in the town who were not inoculated 1482 died, *viz.*, 24.6 per cent., while of the 2297 inoculated, only 36 died, or 1.6 per cent., instead of 332, which would have been the number had the deaths been in the same proportion as among the non-inoculated. In this series there was a reduction of 89.2 per cent. To meet objectors Haffkine and Lyons point out that with such results and so high a proportion of the inoculated to the rest of the inhabitants (2297 to 6933) it is impossible that the inoculated represented the upper or any particular class of the population to which their reduced death-rate could be ascribed. A notable example is given in the Parsee Community which consisted of 306 persons, of whom 277 were inoculated, leaving only 29 uninoculated. In the 29 uninoculated there were 4 deaths from plague, or a mortality of 13.8 per cent., while among the 277 inoculated there were 8 attacks with only 1 death, which occurred in a woman ill of plague before the inoculation. Counting this death the mortality in the inoculated was 0.36 per cent. or 38.3 times lower than in the uninoculated. Again, in Lanowli, where inoculations were carried out in two infected and isolated centers, 422 non-inoculated had 68 cases and 48 deaths, and 293 inoculated had 5 deaths. If the deaths among the

inoculated had been proportionately as high as among the non-inoculated there would have been 33 deaths instead of 5, a difference of 28 deaths, or 84 per cent.

The observations in Bombay and Mora are less instructive, because they are not comparative; still they are interesting, and confirmatory of the favorable influence of the inoculations. In Bombay 8142 persons were inoculated, and among this number 18 were attacked with plague, 16 of whom recovered and 2 died. The 2 fatal cases were ill with plague at the time of inoculation. In Mora Kolaba, a small place in which plague appeared, 419 of the inhabitants were inoculated; 4 of these were attacked, but all recovered. A careful analysis of the results of the inoculation seems to show that the efficacy of the prophylactic depends on the virulence of the bacillus from which the lymph is prepared, and on the dose and its power of producing a well-marked febrile reaction, and that it is more effective in preventing deaths than attacks.

Typhoid Fever.—Wright and Semple have employed Haffkine's method of vaccination against cholera in the prophylaxis of typhoid fever. The vaccines are made from agar cultures of typhoid bacilli which have been grown for twenty-four hours in the incubator. Cultures thus obtained are emulsified by the addition of measured quantities of sterile broth. The resulting emulsion is then drawn up into a series of sterile and calibrated glass pipettes, the capillary ends of which are sealed in the flame so as to form vaccine capsules. The capsules are then placed in a beaker of cold water which is brought to a temperature of 60° C. and kept at that temperature for five minutes. The vaccines are inoculated into the flank. The strength of a typhoid vaccine will obviously be determined (1) by the number of bacilli which it contains, (2) by the virulence of these bacilli. In their later experiments they employed a typhoid culture of such strength that one fourth tube of twenty-four hour culture constituted a lethal dose for a guinea-pig of 350 to 400 grams when hypodermically injected. The quantities of this culture used for antityphoid vaccinations varied from one-twenty-fifth to one-fourth of a tube. The latter quantity (*i.e.*, the quantity which, if injected *alive*, would have proved fatal to a 350 gram guinea-pig) constitutes a somewhat severe dose for a man.

Clinical Symptoms.—When the smaller doses (one-twenty-fifth to one-sixth of a tube) are used the symptoms are comparatively slight. The local symptoms consist in a little tenderness; the constitutional symptoms in a subjective feeling of chilliness, which comes on about two or three hours after the inoculation of the vaccine; further, in a very slight rise of temperature and a little restlessness at night. The symptoms have quite passed off in twenty-four hours. With larger doses the symptoms are all more severe. There is considerable local tenderness and inflammation, which disappear after forty-eight hours. The constitutional symptoms, consisting in some degree of faintness and collapse, begin to manifest themselves generally in two to three hours. In 4 out of 11 cases inoculated with the larger doses faintness and nausea (resulting in 1 case in vomiting) were already well marked after three hours. In the other 7 cases these symptoms supervened later. Only 3 out of the 11 cases were able to put in an appearance at dinner. A good deal of fever was developed in all cases, and sleep was disturbed. By the next day 8 out of the 11 persons treated returned to their normal condition of health; 3 of the 11 looked somewhat shaken in health for some weeks after. Calcium chlorid (45 to 60 grains) was administered with a view to prevent a decrease of blood-coagulability. Examined by the Widal-test the results showed in the most evident manner that the blood of patients who have submitted themselves to an antityphoid inoculation becomes in some measure poisonous to the typhoid bacillus by giving the reaction of immobilization and agglutinization, and it may be inferred that these persons are immunized against typhoid fever. This conclusion, however, cannot be regarded as assured until we are in a position satisfactorily to account for the fact that typhoid-fever patients and Malta-fever monkeys who succumb to these diseases show the specific sedimentation reaction in exactly the same way as the typhoid-fever patients and Malta-fever monkeys who recover from these diseases. (Wright and Semple.)

With regard to the danger associated with antityphoid vaccinations, Wright and Semple say: "When we appreciate that the bacteria which are employed in these vaccinations are *dead* bacteria, and that they are incapable of generating new poison in the system, it will be obvious that the injection of small and measured quantities of these dead bacterial cultivations involves no more risk to life or health than the injection of a medicinal one of morphin. That there is no unknown factor of risk in the case of the injection of bacterial toxins will be evident when we consider that Haffkine has performed nearly 100,000 anticholera inoculations without a death, and as far as we can learn without the supervention of a single serious symptom.

"Although there are no facts as yet upon which to base definite conclusions, it is legitimate to judge, from the extremely slow disappearance of the per-

fectly comparable 'sedimentation' power, which is acquired by undergoing an attack of typhoid, there is every reason to hope that the immunity which is conferred by these vaccines may persist for a considerable number of years. If it does so it will obviously suffice to carry a young adult over the period of his extreme susceptibility."

As to the sphere of application of the prepared antityphoid vaccinations, they suggest, since these vaccinations are unattended with risk, that it would be expedient for every one who is likely to be frequently exposed to the risk of typhoid infection to undergo the vaccination. In particular this would appear to be expedient in the case of young soldiers going to typhoid-infected districts, to nurses in attendance upon typhoid patients, and to persons who are living in any district which is being visited by an epidemic of typhoid.

Semple later reports as regards the value of these prophylactic inoculations, that out of 84 persons vaccinated against typhoid during an epidemic, not one contracted the disease, while of 120 not vaccinated, under the same conditions 16 were attacked by it.

Sanarelli's Anti-amarylic Serum for the Treatment of Yellow Fever.—It is claimed that this serum is germicidal to the microbe causing yellow fever, while it is impotent against the poisoning produced by this organism. Successful results, it is said, can only be obtained by the injection of the anti-amarylic serum very early in the course of the disease (before the microbe has become firmly lodged and has produced diffuse poisoning), then the yellow-fever bacillus is destroyed, and the disease is cut short.

Sanarelli says that good results are difficult to obtain if the treatment be applied when the disease is already advanced after the amarylic poison has largely accumulated in the organism and has already induced grave anatomical and functional changes which the serum is powerless to counteract, and which of themselves suffice to cause death. The application of the serum, therefore, must be confined to the first period of the malady.

"The serum, itself, is in no respect harmful and can be administered in the desired quantity up to the moment when all hope of success is not yet definitely abandoned. The beginning dose is 20 c.c., and if this is followed by no appreciable improvement, a second, third, or further doses may be administered according to the patient's general condition. Injections may be made subcutaneously in the thigh or nates, but in urgent cases it is preferable to introduce the serum directly into a vein of the forearm."

Wasdin, who employed it in several cases in Louisiana says that in one case there was a very prompt reaction, evidenced by the rise of temperature and pulse, and the great redness of the face and skin of the body. This was followed by a cessation of all pain in a few hours and a fall of temperature and pulse to a point lower than before administration. The second and third injection showed less marked reaction. The exhibition of the serum produced free secretion of a non-albuminous urine, some ptyalism, and free perspiration, but Wasdin thinks the patient would have done equally well with other medication. The second case he thinks would have undoubtedly done as well without any medication.

"The influence of the serum upon the vasoconstrictors was very pronounced, causing mental and physical suffering. At first the urine was free and always non-albuminous, but on the second day became diminished although the skin acted freely. A rash was produced, partly urticarial and partly erythematous. The reaction in this second case was excessive, the temperature rising to 104°. The doses administered were 10 c. c. each; the full dose advised was 20 c. c." Wasdin felt satisfied that the larger dose would have caused much alarm and probably harm.

Cases seen in this epidemic were so mild that he did not feel justified in injecting a greater number of persons and subjecting them to the risks attendant upon the use of a remedy with the results of which he was unacquainted.

Streptococcus Infections.—Infections due to the streptococcus have long been the subject of experimental investigations and many bacteriologists have endeavored to produce a curative serum for their treatment. The difficulties in the way of success are numerous and have thus far been only to a limited extent overcome.

It has been shown by many experimentors that it is possible to immunize animals by the inoculation of rapidly increasing doses of living and virulent streptococcus cultures, so that their serum finally possesses the power to protect rabbits under special conditions against infection from many times the fatal dose of the special streptococcus used for the inoculations. The protective power of this serum is specific. It does not exist in normal serum or in the serum of animals immunized against any other organism. Unfortunately, however, this serum more rapidly loses this characteristic power than tetanus or diphtheria antitoxic serum, and often is practically inoperative six weeks after its withdrawal. It has been further shown that this serum does not necessarily confer immunity to any other streptococcus than the special one which has been employed in the original inoculations. It may be almost powerless

against some pathogenic streptococci, while it is strongly protective against others. Like other antitoxic serums it produces its most marked effects when introduced before the inoculation of the streptococcus cultures. If introduced at the same time as the culture it is more active when injected in the same area with the cultures than when introduced on the opposite side of the body of the animal. A series of experimental investigations on the production of this serum has been carried on in the laboratories of the Department of Health for more than three years, and the conclusions which have been reached by other experimentors have been fully verified.

The results obtained from the practical use of antistreptococcus serum in septic infections in the human being have been of the most conflicting nature. Some observers have reported excellent results in a number of cases, while many others have found the serum almost valueless. The practical results are fully in accord with the conclusions deduced from the experimental investigations. Undoubtedly in some instances the serum has proved of value when used in the human being. These were cases in which the serum employed did exercise a protective influence against the special organism producing the infection, and in which the infection was probably not of a very intense nature and a general streptococcus septicemia did not exist.

In the majority of instances in which it has been used clinically it probably has not been of any value. This result should be expected for a number of reasons. In the first place many of the preparations of serum had undoubtedly lost such power as they may have originally possessed before they were used for the treatment of human beings; second, the protective power originally was not sufficient in the doses in which it was employed to have been of much value even if introduced when fresh; third, there is little evidence to show that this serum is of much value when a severe general septicemic condition exists; fourth, in many instances the infection has been due to some pathogenic streptococcus different from that employed in the inoculation of animals from which the serum was obtained and against which the serum would have no power; fifth, many of the cases in which it has been employed were not cases of streptococcus infection at all, but were infections due to entirely different organisms, as the staphylococcus, colon bacillus, pneumococcus, etc.

It may, therefore, be assumed, from what has been said, that at present the practical value of this serum is limited. This feeling has been so strong in the Department of Health that it has never been considered wise to issue it for general use, and while it can be obtained by public institutions or private physicians in this city on application for the treatment of cases of septic infection on condition that the results obtained are reported to the Department of Health, yet its use has never been recommended or encouraged because it was felt that the experimental results did not justify such action. It should be added, further, that these conclusions do not apply solely to the preparation produced in the laboratories of the Department of Health, but to all preparations which have thus far been tried experimentally. The experience of the writer in the use of this serum, and the reports which have been received from those who have employed the serum entirely confirm these conclusions. It does not follow, however, that we may not ultimately obtain a preparation which will have definite practical value.

It should be said in passing that a large proportion of the cases of infection supposed to be due to the streptococcus are on bacteriological examination shown to be due to other organisms. In five of the last six cases treated with the serum produced in the laboratories of the Department of Health bacteriological examinations were made, and in three the infection was found to be due to other germs.

I have not taken up the consideration of several diseases of animals in which remarkable results have been obtained, especially in the preventive treatment, *i.e.*, rabies, tetanus, anthrax, and rinderpest, because of the lack of time, and nothing of special importance has been recently added to our knowledge of the three first, while the work on rinderpest, although apparently successful, is still in the experimental stage.

It may be useful to consider just for a moment, finally, what has been thus far accomplished in the preventive and curative treatment of various infectious diseases by the use of substances of bacterial origin.

Leprosy and tuberculosis may be, in my opinion, entirely thrown out of consideration. There is no satisfactory evidence as yet adduced to show that in either of these diseases anything has been accomplished either in the prevention or cure. In three diseases in the human being, rabies, tetanus, and diphtheria, and anthrax and probably rinderpest in animals, we have perfectly efficient means for conferring immunity which are practically available. It further seems probable that immunity may be also conferred to snake venom. There is also very strong evidence of the practical value of the protective inoculations against cholera and plague. All the work with reference to typhoid fever, streptococcus infec-

tions, and pneumonia must be considered as only in the experimental stage.

When the curative treatment is considered, in only one disease can it be said that serum-therapy has afforded us a perfectly satisfactory method of treatment, that is in diphtheria. In all of the others all of the practical problems remain as yet unsolved, but in some there is a reasonable prospect of an early solution.

MEDICAL PROGRESS.

Subcutaneous Rupture of a Hydrocele.—MACKENZIE (*Brit. Med. Jour.*, May 27, 1899) reports an instance of a rather rare accident, the rupture subcutaneously of a recurrent hydrocele. It was associated with a scrotal hernia, for which a truss was worn. The patient, a plasterer, aged 48 years, was reaching below his scaffold, and as the truss pressed upon the top of the hydrocele, he felt something burst. There was no great pain. There was swelling of the penis, but this disappeared the following day under a cold application and rest in bed. The fluid reaccumulated, but not so rapidly as it did after tapping.

Protrusion of the Intestines in a New-born Babe.—BELL (*Lancet*, June 3, 1899) was called upon to treat a Chinese baby in whom two feet of the intestines protruded from a rent in the much dilated and thinned base of the umbilical cord. The intestine was washed and returned to the abdominal cavity, and the cord was ligated, and cut off. This ligature slipped in a few hours, and the intestines again escaped. They were returned a second time and the rent was sutured. There was no peritonitis, and the wound healed firmly, although cicatrization was not complete until the twenty-first day.

Dilatation of the Anus for Vesical Pain.—GUEPIN (*Rev. de Therap. Medico-Chirurg.*, June 1, 1899) states that anal dilatation is a palliative measure which ought not to be omitted from the treatment of incurable, painful, and spasmodic affections of the ureters and bladder. It is also a proper preliminary measure in certain major operations on the urinary tract.

THERAPEUTIC NOTES.

Muscular Development as a Radical Cure of Hernia.—WARDEN (*Lancet*, June 10, 1899) says that many cases of hernia can be permanently cured by the systematic development of the abdominal muscles. An examination of the external rings of an athlete will show one how firm and small they are, and how much less is the cough impulse, than that felt in an ordinarily muscular person. The advice that is often given to a patient whose hernia is treated by a truss, is to avoid muscular exertion. Following these directions his abdominal walls become flabby, whereas if he takes more exercise than before they will be growing stronger. Warden has seen a great change in the ring, after three- or six-months' regular exercise. He proposes three forms of exercise as especially adopted to such cases: (1) In dorsal decubitus, with the hands at the sides, the patient is to raise his body from a lying to a sitting posture. (2) In dorsal decubitus, let him raise both legs from a horizontal to a vertical position. (3) Let exercise No. 1 be performed in such a manner that the body sweeps toward one side before coming to an upright position, describing a curve and bringing into play the obliques. Each of these movements should be performed twenty or thirty times, or until a distinct sense of weariness is produced.

Clinical Report on Heroin.—BEKETTOV (*Wratsch*, No. 19, 1899) has given to twenty-five patients the product of morphin and acetic acid, called heroin. The dose used was $\frac{1}{12\,5}$-grain, in the form of a powder. He found that it lessened cough, so that patients were able to sleep, who before had been kept awake by constant coughing. If there was an increased respiration from cough or painful pleurisy, under the influence of heroin the respirations became slower and deeper. If, however, dyspnea was due to some cardiac condition, or to diminished pulmonary surface, as when cavities were present, it was not affected by the heroin. The drug had no effect on the circulatory or digestive systems. It produced sleep if the cause of insomnia was pulmonary. In wakefulness due to nervous conditions it was not so satisfactory. In hemoptysis it seemed the ideal remedy, preventing cough which is so disastrous under such circumstances. Some patients became accustomed to the drug, so that the dose had to be increased slightly; in others the same dose produced the same therapeutic effect although the administration was continued for weeks. In no instance was more than $\frac{1}{3}$-grain given during the twenty-four hours, nor a larger single dose than $\frac{1}{10}$-grain.

Chloral in Typhoid Fever.—DUMONT (*Rev. de Therap. Medico-Chir.*, May 15, 1899) describes the effect of the administration of chloral, sometimes associated with morphin for persistent insomnia occurring in typhoid fever. This method of treatment has been carried out in Lancereaux' wards with good results. Not only did sleep follow, but restlessness, delirium, and nervous exhaustion were thereby prevented. As a natural consequence, the general condition of the patient was improved, and the duration of the fever, as well as that of convalescence was materially shortened.

Resection of the Sympathetic for Epilepsy.—AMAT (*Bull. Gen. de Ther.*, May 15, 1899) reviews the records of the cases of epilepsy which have been treated by resection of the cervical sympathetic, and shows that this operation is most unsatisfactory. While some apparent cures have been reported, in other instances the operation has resulted in an immediate increase in the number of epileptic seizures, and in some patients trophic disturbances have manifested themselves at a considerable time afterward. Hence the wise physician will keep to his treatment by bromid, which if it rarely cures, often benefits to a considerable degree, and never does serious injury.

Treatment of Hematuria in Malaria. — WHITEHALL (*New Orleans Med. and Surg. Jour.*, June, 1899) dis-

putes the idea that quinin is not a good remedy in the treatment of hematuria occurring in malaria. He cites three cases in which he treated patients suffering from a severe form of malarial hematuria with large doses of quinin (60 to 80 grains in twelve hours) with prompt recovery. There was no doubt that the hematuria in these cases was of malarial origin, and as the quinin was not given until after the blood appeared, it could not have been caused by the medicine, as has sometimes been claimed.

New Method of Closing the Peritoneal Cavity.—O'HARA (*Brit. Med. Jour.*, June 10, 1899) treats the peritoneal opening in the following manner: The incision through the peritoneum is never made more than four or five inches in length. If additional room is required the opening is stretched. As the membrane is very elastic it readily lends itself to this procedure. When the operation is over, a purse-string suture of kangaroo tendon is passed completely around the opening in the peritoneum, beginning at the middle of the incision. When this is drawn up and tied the peritoneal cavity is perfectly closed against leakage from without, and there is no raw surface within to form adhesions to intestinal coils, etc. The suture is easily applied, and the peritoneum is in a far better condition to withstand any post-operative vomiting then after the ordinary suture. The remaining layers of the abdominal wall are closed by interrupted sutures. O'Hara has never seen any bad results follow this method of closure.

Arsenic in Chorea.—As the pathogeny of chorea is very complex, the therapeutic indications are correspondingly variable. FÉRÉ ("Twentieth Century Practice", vol. x.). There is as yet no specific treatment. Among the factors entering into the production of chorea we must consider a nervous temperament, infection, shock, general debility, disturbed sleep, etc. When the chorea is associated with debility marked by anemia, general treatment is the best antispasmodic. Here arsenic has had and still enjoys a well-merited reputation, especially for chlorotic and lymphatic patients. It should be given in large doses, such doses being less dangerous than small ones, long continued. Arsenious acid, gr. $\frac{1}{30}$, increased by gr. $\frac{1}{30}$ daily for children from eight to ten may be given, or Fowler's solution, from 5 to 8 drops a day for children and from 10 to 20 drops a day for adults, and gradually increased. Toleration will be facilitated by diluting the solution with a tumblerful of either alkaline or acid carbonated water, which may be taken in two or three portions during the hour following meals, or if Fowler's solution is very badly borne by the stomach it may be administered hypodermically in cherry-laurel water (to diminish the pain of the injection). The amount of the first injection should be $\frac{1}{60}$ c.cm. (⅓ m.), and this is increased by an equal quantity every day. Or arseniate of sodium may be used in rapidly increasing doses, gr. $\frac{1}{30}$, $\frac{1}{10}$, $\frac{1}{10}$ daily for slight cases in children. In severe cases one may begin with gr. $\frac{1}{15}$ daily and increase the quantity by $\frac{1}{15}$ gr. every day until gr. ss. is reached. After continuing its maximum for three days the quantity is again diminished by $\frac{1}{15}$ gr. each day. Should treatment by the use of arsenic fail after twenty days it should be discontinued; otherwise it may be kept up several days after the cessation of the movements. One must guard against arsenic poisoning. With this drug iron, cinchona, cod-liver oil, phosphate of lime, etc., may also be employed. Féré has not used antispasmodics (bromids, etc.) extensively in chorea, for the reason that he prefers to treat the general condition rather than the spasms.

Treatment of Incontinence of Urine in Children.—(THOMSON, "Clinical Examination and Treatment of Children.") Much more benefit can be gained from the use of sedatives than either stimulating or tonic remedies. Of course, any physical cause, as phimosis, should be removed, and the child should not be allowed to drink anything after five or six o'clock in the afternoon. He should be awakened at eleven or twelve o'clock, and made to empty his bladder. Scolding or punishing the child is of no avail, and should not be done. Belladonna is the most valuable remedy, and should be given in large doses, so that the pupils should be moderately dilated and the throat be somewhat dry at bedtime. Twenty or 30 drops of the tincture may be given to a child four or five years of age at bedtime, and to an older child, from six to ten years of age, 30 drops may be given in the afternoon, and the dose repeated at night. If necessary this dose may be gradually increased up to a dram. If this should fail to prevent the wetting of the bed, the fluid extract of ergot, 20 drops three times a day, often gives good results. Tincture of nux vomica often is efficacious, especially when used in connection with belladonna.

Treatment of Simple Conjunctivitis.—OHLEMANN ("Ocular Therapeutics") in acute cases advises the use of cold compresses and the following lotion:

℞	Zinci sulphat.	gr. ⅔
	Aquæ dest.	ʒ iv.

Or

℞	Plumbi acetat. neutralis. . .	gr. ½
	Aquæ dest.	ʒ iiss.

In chronic cases, in which the epithelium of the cornea is intact, 6 to 10 drops of a 15-per-cent. solution of lead-water in a wineglassful of boiled water should be applied on compresses to the eye two or three times a day for fifteen minutes at a time. The following ointment is very efficacious:

℞	Hydrargyri oxidi flav. . . .	gr. iii
	Vaselini.	ʒ iiss.

When additional redness of the edges of the lids is present washes are sometimes not well borne. In such cases the following ointment should be used at night:

℞	Hydrargyri precip. alb. .	gr. iii–ivss
	Zinci oxidi alb. . . .	gr. ivss–viiss
	Aceti plumbi	gtt. iv–vi
	Vaselini	ʒ vi.

In chronic cases of an eczematous nature this ointment is useful:

℞	Ichthyol.	gr. $\frac{3}{10}$–$\frac{7}{10}$
	Amylis, Zinc. oxidi aa . . .	ʒ iiss
	Vaselini	ʒ vi–gr. xxv.

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SATURDAY, JULY 29, 1899.

PUERPERAL FEVER; ITS BACTERIAL CAUSE AND SERUM-THERAPY.

THE deaths which appeal most to the physician are undoubtedly those which occur in child-bed. Despite our increased knowledge concerning the germ origin of the diseases which prove fatal during the puerperium we have not been able to entirely prevent the occurrence of puerperal fever. It had been hoped that streptococcic serum would prove of great service in the treatment of the disease, and in a certain number of instances it appears to have been efficacious, but on the whole its employment has been a source of keen disappointment.

It has been assumed in thus trying streptococcic serum as a specific remedy, first, that puerperal fever is always due to a streptococcus infection, and secondly, that all micro-organisms that grow in chains and take the ordinary anilin stains belong to the same species. Neither of these assumptions is justified by the facts. Puerperal fever undoubtedly is sometimes due to other germs than to streptococci, and it is extremely probable that the diphtheria bacillus sometimes plays a rôle in the etiology of the disease. At times there is perhaps a mixed infection by these germs, as in the throat, and unless care is taken in culture methods it might seem as though only the streptococcus were at work. In infections of the bladder the bacillus coli communis is so often the causative agent that one is tempted to wonder if it plays a rôle in uterine infections also. Adhesions between the uterus or adnexa and intestines often exist as a result of former inflammatory conditions, and by means of these the wandering of intestinal bacteria like the bacillus coli is favored during the post-partum period, when extensive lymphatic absorption occurs. In addition, at this time the uterine tissues are being dissolved in the body juices, and so furnish excellent culture material for the multiplication of micro-organisms. These facts would explain at the same time the origin of certain cases of so called idiopathic infection. The demonstration of the bacillus coli in the process would be extremely important since recent work in France and Italy has shown that the manufacture of a serum which is protective against its infection is possible.

As to unity of species of all streptococci, that is largely an exploded idea. The hope of securing a specific serum depends on our finding some method of surely distinguishing the various forms of microbes that grow in chains. The prospect of successful serum-therapy of puerperal fever, then, depends on a more exact knowledge of the etiology of the disease. In order to bring this about a large number of careful observations will be necessary. The aim is well worthy of the humanitarian sacrifice of time and labor on the part of every one interested in the reduction of mortality among the mothers of the land.

COMPENSATORY THERAPEUTICS.

IT has been found in recent years that by judicious training the impaired functions of many organs may be sufficiently restored to enable them to accomplish for the individual organism practically all that is necessary. Graduated exercises, moderately and nicely adjusted hill-climbing, baths supplemented by judiciously resisted movements while in them, constitute a very helpful resource in the disturbed compensation of chronic heart trouble. Heart lesions do not disappear, and fatty and other degenerative conditions of the heart muscle remain, but a

lasting tone is often imparted to the muscular substance of the heart and the arteries which enables them to do their work with much less difficulty and embarrassment than before.

But cardiac therapeutics is not the only one to benefit by compensatory therapy. Urbantschitzch of Vienna has shown that by aural exercises many supposedly deaf children can be made to hear. He has demonstrated in a number of cases that the hearing faculty is seemingly only lying dormant for want of specific exercise. This exercise it has never secured because the sense of hearing in such people requires much more excitation than in the normal individual. If a special effort is made, however, it responds, and after patient training is able to catch many sounds that before escaped it entirely. The psychical element in hearing is trained to catch the faint inklings of sound that come wandering up through the defective hearing apparatus and that were previously neglected because of their indefiniteness or absolute unmeaningness. This system of developing the faculty of hearing has been found to be effective also in certain cases of deafness due to disease, in which there is no gross lesion of the hearing apparatus.

In tabes, Frenkel's system of exercises enables the physician to relieve to a great extent that most troublesome symptom of the disease, incoordination. To many ataxic patients who have been bedridden for years, walking on the streets, which for them had become either impossible or a torture because of their lack of confidence in themselves, becomes under this treatment not only easy of accomplishment, but a positive source of pleasure. Here, as in the case of the hearing exercises, the psychic element—the training of the attention—is an important part of the treatment, though it seems undoubtedly true, also, that the impaired nerve paths learn by practice to carry more nervous impulses, and do it more definitely than before. That exercise not overdone leads to increase of function, is a maxim that is of wide application in physiological processes, and that it holds good in the case of tabes seems not surprising.

Similar beneficial results have been accomplished here in America in ocular therapeutics by corresponding methods. Patients who suffer from slight errors of refraction have been taught by judicious exercise of their accommodation to compensate for the refractive error, and after a time symptoms disappear even without the use of glasses.

In pulmonary therapeutics exercises have always occupied a notable place, though it is true that of late years even more attention than formerly has been paid to them.

It is evident, then, that we have in this principle of compensatory therapy a very valuable therapeutic measure, and one that deserves even more attention than has been given it. It is strictly in line with the most rational treatment of disease, since its only object is to aid nature, and that by the readiest and most direct means, *vis.*, by guiding and increasing the functional efforts of the organism. Wherever psychic or muscular elements enter into a patient's pathological condition, training is capable of yielding excellent results. In hysterical and nervous affections it has been successfully applied in such methods as the rest cure. In purely mental disease training of the emotions can be most effective for the suppression of symptoms. In such associated psychical states as vertigo, the actual training given to dancers and acrobats may prove of service. In ailments that involve even unstriped muscular fibers, the modern therapeutics of gastric insufficiency and atonic constipation, massage, and electrization is accomplishing much by stimulant exercise.

ECHOES AND NEWS.

Calmette's Serum Effective.—The London *Times* of July 21st contains a report from Allahabad of a well-authenticated cure, by the injection of Calmette's serum, of a snake-bitten patient who was in a state of collapse.

Yellow Fever Decreasing in Mexico.—The Texas State Health Department received official advices from Mexico on July 21st that the yellow-fever epidemic in coast cities and towns is rapidly decreasing in severity. Quarantine has been enforced along the Mexican coast.

More Nurses for the Philippines.—Nine more trained nurses left New York City for the Philippines on July 20th under the auspices of Red Cross Auxiliary No. 3 for the Maintenance of Trained Nurses. When they arrive at Manila they will report to Miss Henshall, who will then have under her direction a corps of twenty-seven nurses.

The Plague at Europe's Doors.—The Paris correspondent of the *Courrier des Etats Unis* states that the plague has appeared in Alexandria, which city is the key of Egyptian commerce. He dreads, therefore, that if quarantine

and medical inspection are not instituted and vigorously enforced, Europe, through the principal Mediterranean ports, will become contaminated.

Santiago's Epidemic Is Ended.—Nothwithstanding the fever epidemic, only sixteen deaths were reported at Santiago during the week ending July 19th. This is the lowest mortality the city has ever known. No new cases were reported after July 14th, and nearly all the patients in the hospitals are convalescent. General Wood will not lift quarantine, however, until all danger is past.

A Universal Language for Men of Science.—At a recent meeting of the Prussian Academy of Sciences, Professor Dills spoke of the need of a universal language for men of science. He considers Volapük an artificial product of little use. English is his choice as the world-language because of its wide prevalence and because its simple structure and grammar make it eminently suitable for such use.

Assistant Surgeon of the First California.—Dr. George H. Richardson of the class of '91, Medical Department of the University of Pennsylvania, who was sent to the Philippines on May 17, 1898, as acting assistant surgeon, has been appointed captain and assistant surgeon in the First California United States Volunteer Infantry. Dr. Richardson's experience has been a very varied one, he having arrived from Burmah only a few months before sailing for Manila.

A Physician Assaulted.—Dr. Robert P. Froehlich of 61 East 105th street, New York, was assaulted and kicked into insensibility on July 24th, by a gang of roughs because he had dressed the wound of a non-union motorman belonging to the Second avenue street-car line whom they had maltreated. Though painfully injured, no bones were broken, and the physician hopes to be able to leave his house within a few days. Steps have been taken to apprehend his assailants.

Asylum for Insane Indians.—The asylum for insane Indians at Canton, S. D., for which Congress made an appropriation of $42.000, with an additional $3000 for the purchase of ground, will soon be erected. Out of a total of 250,000 Indians in the United States there are only 58 who are insane, 1 doubtful, 6 idiotic and 2 partly idiotic. It would seem, then, that the simple physiological life of the barbarian has some advantage over the brain-paralyzing existence characteristic of civilization.

Willard Hospital Inspected.—Among 2000 inmates of the Willard State Hospital thirty-four cases of diphtheria have been found. On July 21st the New York State Board of Health ordered a rigid quarantine of that institution. The diphtheria has been of a mild type and no deaths have been reported. All the diphtheria patients are being treated with antitoxin, and immunization doses of the serum have been administered to many of the other inmates. Dr. Macy and his assistants are attacking the disease systematically and effectively.

Post for Army Consumptives.—Secretary Alger has approved Surgeon-General Sternberg's recommendation that Fort Bayard, N. M., be set aside for the treatment of army consumptives. General Sternberg will immediately prepare to equip the post, from which some of the troops will be withdrawn to make room for patients. A competent corps of surgeons will be assigned to duty there, but no special medicinal system will be followed, great reliance being placed on the benefits of the climate. It is proposed to transfer several patients to the new sanatorium from the Soldier's Home near Washington.

The Tobacco-smoking Evil.—A writer in the German scientific periodical *Prometheus* declares that over-indulgence in tobacco will prove the ruin of South-American peoples. Not only do children of two or three years smoke all day long, but mothers have been seen trying to quiet their babies by putting cigars in their mouths. At the recent annual conference of the Lancashire and Cheshire branch of the British Medical Association Dr. J. Hilton Thompson propounded a new theory in respect to cigarette smoking. He showed the distinct presence of carbonic-oxid gas in tobacco smoke, and when inhaled from cigarettes, he said, it has the same injurious effect on the system as choke damp in collieries.

A Prize for a Thesis on Army Rations.—Appreciative of the necessity for proper food for the men of the army and navy serving in tropical climates, Dr. Louis L. Seaman of New York City, late Major-Surgeon of the First Regiment, United States Volunteer Engineers, has offered through the Military Service Institute of the United States the sum of $100 in gold—or a medal of equal value as the successful competitor may elect—for the best thesis on "The Ideal Ration for the Army in the Tropics." This competition is open to commissioned medical and other officers of the army and navy, volunteer and regular. All papers should be submitted before March 1, 1900. The Board of award will be Colonel Weston, Acting Commissary General; Lieutenant-Colonel Charles Smart, Deputy Surgeon-General, and Lieutenant-Colonel William E. Dougherty, Seventh United States Infantry. The headquarters of the Military Institute is at Governor's Island, New York Harbor.

Queen Victoria's Family.—The Queen's family is now an exceedingly large one, how large can perhaps best be realized when the number of her direct descendants is set forth in tabular form:

Queen	1
Sons and daughters living	7
Grandchildren	33
Great-grandchildren	31
Total	72

Besides these direct descendants, the Queen has something like 160 cousins and descendants of cousins. I they are counted with the Queen's own children, grandchildren, and great-grandchildren, the members of the royal family are increased to not less than 230. The ages of the four generations of the royal family in the direct line of succession are:

Queen	80
Prince of Wales	55
Duke of York	34
Prince Edward of York	5

—*London News.*

The "Kissing Bug."—"This and other papers are recording daily the sufferings of people who think that they have been bitten by a newly invented insect. That the bites are inflicted by something is probably true, and there is no doubt at all about the tumefaction and the pain which the doctors are called upon to reduce and assuage, and yet there is not the faintest evidence to show either that a strange insect has made its appearance in the country or even that some familiar one has become more fierce and venomous than usual. The entomologists unite in denying the existence of a 'kissing bug,' and though little creatures by the dozen of one sort or another have been submitted to these authorities as criminals caught in the very act of osculatory attack, still the learned ones refuse to be convinced, and not only give the accused names as ancient as they are long, but assert and, if need be, prove that the incriminated bugs couldn't bite if they would, and wouldn't if they could. The whole trouble seems to be the effect of misguided and overexerted imaginations. Charlatans of the species that has received general mention once or twice in this column claim that all, and occasionally demonstrate, that a few bodily ills can be cured by 'faith.' This 'kissing bug' epidemic tends to show that 'faith' can cause functional disturbances as well as remove them. But everybody knew that before."—*New York Times.*

Railway Accidents in the United States.—The Interstate Commerce Commission makes the following report for the year ending June 30, 1898: The total number of casualties to persons on account of railway accidents during the year ending June 30, 1898, was 47,741. The aggregate number of persons killed as a result of railway accidents during the year was 6859, and the number injured was 40,882. Of railway employees, 1958 were killed and 31,761 were injured during the year covered by this report. With respect to the three general classes of employees, these casualties were divided as follows: Trainmen, 1141 killed, 15,645 injured; switchmen, flagmen, and watchmen, 242 killed, 2677 injured; other employees, 575 killed, 13,439 injured. The casualties to employees resulting from coupling and uncoupling cars were, persons killed, 279; injured, 6988. The corresponding figures for the preceding year were, killed, 214; injured, 6283.

The number of passengers killed during the year was 221 and the number injured 2945. Corresponding figures for the previous year were 222 killed and 2795 injured. In consequence of collisions and derailments 72 passengers were killed and 1134 passengers were injured during the year embraced by this report. The total number of persons, other than employees and passengers, killed, was 4680; injured 6176. These figures include casualties to persons classed as trespassers, of whom 4063 were killed and 4749 were injured. The summaries containing the ratio of casualties show that 1 out of every 447 employees was killed and 1 out of every 28 employees was injured. With reference to trainmen—including in the term enginemen, firemen, conductors, and other trainmen—it is shown that 1 was killed for every 150 employed and 1 was injured for every 11 employed. One passenger was killed for every 2,267,270 carried and 1 injured for every 170,141 carried. Ratios based on the number of miles traveled, however, show that 60,542,670 passenger-miles were accomplished for each passenger killed and 4,543,270 passenger-miles accomplished for each passenger injured.

MEDICAL MATTERS IN NEW YORK.

A NEW CURE FOR INSOMNIA—MATCHES IN TEA, A NEW DELICACY FOR CONVALESCENTS—BELLEVUE'S ACROMEGALY PATIENT DEAD—MORE TETANUS—THE ACTIVE CHRISTIAN-SCIENCE "HEALERS"—THE BABIES' HOSPITAL SUMMER BRANCH—THE HEALTH DEPARTMENT AND ITS NEW QUARTERS—YELLOW-FEVER PATIENTS DISCHARGED.

WE have heard of the man who carried a hot brick in his pocket to keep his feet warm, but never until now of one who attempted to woo the goddess of sleep by inhaling illuminating-gas. A painter, forty-two years of age, residing in Ludlow street, is the latest aspirant for fame in this particular line, and that the sleep induced by this method of treatment did not continue for all time was due only to the opportune discovery of his condition by a police officer. To the magistrate before whom he was haled the painter explained that he had found this original recipe for insomnia in a newspaper, and had determined to give it a trial.

Bellevue Hospital must have its periodical sensation. This time it is due to the accidental introduction into one of the male convalescent wards of a new beverage, the popularity of which, however, appreciably waned after the first draught. It all happened in this wise: A few days since an attendant brought a vessel containing a gallon of hot tea from the hospital kitchen and placed it on a table in the ward preparatory to its distribution to the patients. While his attention was momentarily distracted, one of the patients, in reaching for a glass on the table, overturned a box of matches into the tea. Another attendant started in to distribute the nectar, but noticing the matches floating about in it, decided that a combined wood-pile and weak-tea diet might not be exactly the fuel the convalescents most needed, and so fished them out, but on general principles being opposed to unnecessary waste and all unconscious of the fact that the phosphorus had been dissolved off the matches, proceeded to ladle out the tea. It was not long before there was a sound not exactly of revelry by night, and liberal use of emetics and of stomach-tubes was necessary before the ward was restored to its accustomed matchless equanimity. Fortunately no lasting ill effects resulted from the radical departure from old-time methods, and in future the tea will be served in the regulation way, without frills or addenda.

Then, too, Bellevue has lost its star patient, and great is the regret thereat. Mary Fogarty, fifty-one years of age, who was affectionately and widely known to her friends and neighbors in West Sixtieth street as "Big Nose Mary," died on the afternoon of July 21st from acromegaly. Common report has it that she was the first patient ever received at the hospital suffering from this disease,

although this statement has not been officially confirmed. She weighed nearly three hundred pounds at the time of her death, was nearly, if not quite six feet in height, and wore a heavy beard and mustache. Her hands, feet, and nose especially showed the advanced stage of the disease with which she was afflicted, all being enlarged to enormous proportions.

Tetanus antitoxin has again been tried and found wanting, which, perhaps, is not surprising as it has met this fate so often in this vicinity during the past two weeks. Guiseppi Consumanno, fourteen years old, while patriotically celebrating the Independence anniversary of the land of his adoption, ploughed a furrow on one of his hands with the assistance of a pistol and a small-caliber bullet. Ten days later symptoms of tetanus developed, and on July 16th the boy was admitted to the Columbus Hospital. Antitoxic serum was injected, and every effort made to save his life, but he died on July 22d. This is the twenty-first death from tetanus that has occurred in and about the city since the Fourth of July, and all can be traced directly to wounds inflicted by firearms or fireworks on that day.

The medical and lay press devote columns to ridiculing the claims of Christian-Science "healers," and yet this sect goes merrily on its way contributing to the mortality records. A certain Mr. Robertson, seventy-eight years old, formerly a well-known artist, was the latest victim in this city. His ailment was said to be gastro-enteritis, and he was ill but twenty-four hours. His daughter, a "first reader," or it may be "primer," in the First Christian Science Church of Orange, N. J., believing prayer to be more efficacious than bismuth under such circumstances, administered the former in large doses, with the result that after the lapse of the number of hours above mentioned no further treatment was necessary. Funeral services were held on the 25th inst.

The managers of the Babies' Hospital at Fifty-fifth street and Lexington avenue, on July 22d opened a new hospital building at its summer branch settlement at Oceanic, N. J. It contains an entirely new feature—two private wards in which sick babies from the hotels and cottages of the surrounding summer resorts can be treated. Heretofore the hospital has accepted free patients only, mostly from New York's tenement-houses, but the managers have been so besieged for private treatment by summer frequenters of the resorts nearby, that they have decided upon this departure. Only children under three years of age are accepted in the free wards, but none suffering from contagious disease. Their stay at Oceanic is not limited, but all are cared for while they need sea air and country living.

The ordinance recently offered at a meeting of the Board of Aldermen to forbid the sale of cigarettes to boys under eighteen years of age has been reported favorably by the Law Committee, to which it was referred, and will be acted upon at the next meeting.

Between 350 and 400 tons of records are now being moved from the present quarters of the Board of Health in the Criminal Court building in Centre street to its new home in the building at Sixth avenue and Fifty-fifth street, which was formerly occupied by tne New York Athletic Club. The Health Board was organized in 1866, just after a cholera panic, and was first located in the Police building at Mulberry and Mott streets. Five years ago it moved into the quarters it is now leaving, where it has always had an uncomfortable existence because of the prejudice of the other departments of the city to its presence among them. It will now enjoy a sort of "splendid isolation" in a part of the city where it will be more accessible to the medical profession. Almost every year some new duty is added by the Legislature to its work, and backed up as it is by law and by police of its own, it is a very powerful safeguard of the public health. Its Bureau of Vital Statistics records each year the deaths of 50,000 people and the births of as many others. In the Sanitary Bureau there are five divisions—of general and sanitary inspection, of contagious diseases, of medical sanitary inspection, of inspection of foods, offensive trades and mercantile establishments, and of school inspection; and there is a pathological and bacteriological division. The staff of officers consists of the president, three commissioners, the secretary, counsel, seventeen honorary consulting officers, and twelve salaried executive officers. There are nearly 800 employees in the main office, and the 4 branch borough offices, including 96 sanitary policemen. Its expenses are between eleven and twelve hundred thousand dollars a year and it has an income of about $3000 from the sale of vaccines and antitoxins and from transcripts of records.

Miss L. C. Clendenin, who has been ill with yellow fever and quarantined on Hoffman's Island since her arrival here on the transport "McClellan" from Santiago on July 6th, has entirely recovered and been discharged. Mr. Oscar L. Lackey of Baltimore, the other patient from the transport, who was inoculated with antitoxin serum under the supervision of Health Officer Doty, has also recovered and left for his home.

MEDICAL MATTERS IN CHICAGO.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION—INCORPORATION OF THE ILLINOIS SOCIETY FOR THE PREVENTION OF CONSUMPTION—VOLUNTEER PHYSICIANS AS MEDICAL INSPECTORS—RESOLUTIONS ADOPTED BY THE STATE BOARD OF HEALTH—BEQUESTS OF DR. ROBERT L. REA.

ACCORDING to a preliminary announcement the twenty-fifth annual meeting of the Mississippi Valley Medical Association will be held in this city October 3, 4, 5, and 6, 1899. This is the first time the Association has held its meeting in Chicago, and the local profession, under the leadership of Dr. Harold M. Moyer as Chairman of the Committee of Arrangements, has provided many attractions for the visiting doctors. Among them may be mentioned an attractive program in both medical and surgical sections, and special clinics in all the departments of medicine and surgery, to be given at the various hospitals and colleges before and after the meeting.

The occurrence of the autumn festival at this time is an added attraction. The President of the United States

and his Cabinet, Admiral Dewey, the Premier of Canada, and President Diaz of Mexico have signified their intention of being present. The railroads have promised a one-fare round-trip rate, with a liberal limit to tickets. The Committee of Arrangements will issue a souvenir program which will also be the official program, to the number of 35,000, to be sent to every doctor in the Mississippi Valley and territory contributory to Chicago. In addition to the program of the meeting this will contain a schedule of clinics and a sketch of medical Chicago. Dr. Duncan Eve of Nashville, Tenn., is president, and Dr. Henry E. Tuley of Louisville, Ky., secretary of the Association.

The Illinois Society for the Prevention of Consumption has been incorporated by Drs. Frank W. Reilly, Henry B. Favill, and Mr. Joseph Hughes.

Our City Health Commissioner, Dr. Arthur R. Reynolds, has issued a call for volunteer physicians to serve as medical inspectors, and more than forty have been enrolled upon the books of the department to undertake the house-to-house canvas for the purpose of disseminating knowledge as to the care of infants and to inspect sanitary conditions. It is intended by the department that the work shall not be interpreted as being of a charitable nature; the physicians are not required to prescribe or perform medical service except in cases of emergency. In the first place, the object is to instruct mothers and those in charge of infants and children during the hot weather as regards hygiene of the young, their feeding, clothing, bathing, and care, with a view to the prevention rather than the cure of disease. Secondly, the object is the correction of sanitary defects and the abatement of nuisances prejudicial to the health of adults and children alike. The work of the Health Department in a city like Chicago is necessarily vast in its possibilities, and especially inviting to medical students who may wish to become experts in bacteriologic or other research. For this reason the plan of Commissioner Reynolds to increase his office force without expense to the city by admitting recent graduates of medical colleges to the Department Laboratory is to be commended. Of course facilities can be furnished for only a limited number, but this is an advantage, as it gives wide opportunity of selection. It is stated that 2623 bacteriologic examinations were made last year, and 2635 examinations of water, ice, milk, vaccine, lymph, butter, etc., and 30,000 other examinations of ice cream, cheese, and the like. In making tests of this kind medical students with a little training will be able to do efficient work and thus add greatly to the value of the department, while at the same time securing excellent drill in the important province of preventive medicine.

At the July quarterly meeting of the State Board of Health, held in this city, the following resolutions were adopted by the Board:

WHEREAS, Section 2, of an Act to Regulate the Practice of Medicine in the State of Illinois, and to repeal an Act named therein, approved April 24, 1899, in force July 1, 1899, gives the State Board of Health discretionary power as to granting certificates to graduates of legally chartered medical colleges in Illinois in good standing as may be determined by the Board, and,

WHEREAS, It is evident, notwithstanding the discretionary power given the Board, that the true intent and purpose of this Act is to require all persons to prove their qualifications to the State Board of Health by passing an examination; therefore, be it

Resolved, That all applicants for a State certificate to practise medicine and surgery in the State of Illinois, who are graduates of medical colleges in good standing, as may be determined by this Board, shall, before receiving a certificate, be obliged to pass an examination such as contemplated in Section 2, of an Act to Regulate the Practice of Medicine in the State of Illinois, in force July 1, 1899.

Resolved, That the phrase "medical college or institution in good standing," in the first paragraph of Section 2, of the Act to Regulate the Practice of Medicine in the State of Illinois, in force July 1, 1899, is hereby defined to include only legally organized, properly conducted medical institutions, having a sufficient and competent corps of instructors and ample facilities for teaching, dissections and ambulatory and hospital clinics, which conform to the requirements relative to the preliminary education of matriculants, the course and period of study, the number, character, and length of lecture terms, the duration of attendance on hospital and clinical instruction, which obtain in the majority of medical colleges in the United States.

The Illinois State Board of Health, however, will not consider in good standing after January 1, 1900, any medical institution which does not require of all students (excepting graduates of reputable colleges of arts and sciences, or reputable colleges of dentistry, pharmacy, or veterinary medicine, to whom one year's advanced standing may be granted), as a condition of graduation, an attendance of four full courses of lectures of at least six months each, in four separate years, no two courses commencing or ending in the same calendar year of time.

Resolved, That no medical college issuing a catalogue of announcement in which are contained misrepresentations respecting its teaching, clinical or hospital facilities, its faculty, or its courses of study, or false representation as to the number of students matriculated or in attendance, will be regarded as in good standing.

Dr. Robert L. Rea, who died July 10th, bequeathed to the Northwestern University at Evanston $10,000 with which to endow the Department of Anatomy, which shall be known as "The Rea Professorship of Anatomy." The College of Physicians and Surgeons, of which the deceased was a faculty member nearly twenty years, receives $5000, to be devoted to the educational expenses of worthy and indigent students. The bequests to the Northwestern University and to the College of Physicians and Surgeons are direct and made payable inside of three years after the death of Dr. Rea.

For Leucorrhœa.—DALCHE claims good effects from the use of tampons soaked in a mixture of lactic acid, 3 parts, and glycerin, 100 parts, which he first tried in the belief that lactic acid is the natural agent for vaginal antisepsis.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

POISON BY POST AND THE INSANITY PLEA—CANCER DELEGATE TO AMERICA—ANOTHER CAUSE OF CANCER—CLIFFORD ALLBUTT'S POLYCLINIC LECTURE—SIR WILLIAM HENRY FLOWER—UNIVERSITY EXTENSION WORK IN MEDICINE—THE MEDICAL DEFENSE UNION.

LONDON, July 16, 1899.

ENGLISH justice has a grim way of "arriving" with surprising promptness. The girl, Mary Ansell, whose callous cruelty in poisoning her imbecile sister for the sake of her insurance money, by means of a cake sent by mail, containing phosphorus paste, we referred to some three months ago, was put on trial last week. She was found guilty and condemned to death inside of forty-eight hours, and was duly hung to-day. A petition was presented to the Home Secretary, urging that several of her family were mentally defective and that the girl herself was probably insane, but as it was overwhelmingly proved at the trial that the prisoner had deliberately taken out an insurance policy on her sister's life without her knowledge, then tried twice to poison her, once unsuccessfully by means of a package of tea, and that she wanted the money in order to enable her to get married, as her fiancé and even she herself admitted; a lunatic capable of that degree of ingenuity and calculation would be a criminal monster, which any community would be justified in hanging in self-defence, and the petition was therefore refused.

Exit consumption, enter cancer. The Cancer Society of London has despatched an envoy, Dr. Arthur Duffy, to the United States to study the American methods of investigating the disease, and especially those of the New York State Cancer Laboratory at Buffalo, under the direction of Dr. Roswell Park. The society's chairman, Sir Charles Cameron, M.P., has announced his intention of moving in Parliament for the appointment of a royal commission to investigate the alleged alarming increase and for the collection of information bearing upon the causation and methods of prevention of the disease.

Dr. Lambert Lack's announcement that he has discovered the cause of cancer in certain disturbances of the basement membrane of epithelium, by imitating which in the lower animals he has succeeded in producing cancerous growths, is read with considerable scepticism. It recalls too vividly the old "isolation" or "strangulation" theory of Cornil, according to which under-proliferation of the connective tissue was the starting point, by cutting off buds or islands of epithelium which once isolated set up reproduction on their own account. However, all will await the publication of the theory and its details in the regular journals with interest. No further details have yet been received from "Dr. Bra of Paris" since his preliminary announcement of the discovery of the "cancer germ" in the daily papers a couple of months ago.

Professor Clifford Allbutt of Cambridge lectured last week before the members of the London Polyclinic on "Cerebral Syphilis." This was the first of a series of single lectures or short courses of lectures by distinguished members of the profession, both of London and the Provinces. The work at the Polyclinic will probably be suspended during the month of August, at the close of the present (second) term of lectures and demonstrations.

The death of Sir William Flower, the distinguished zoologist, has brought to mind the well-nigh forgotten fact that he was originally an active member of our profession. He was a regimental surgeon all through the Crimean War and anatomist and assistant-surgeon at Middlesex Hospital for several years after that. Then for twenty-three years he was Curator of the Museum of the College of Surgeons and for five years Hunterian Professor of Comparative Anatomy in the College, so that although he early retired from actual practice he was intimately connected with the science and teaching of medicine during the greater part of his career. Flower was no giant or discoverer, although he belonged to a generation of such, but he has left behind him a mass of excellent and most valuable work. He was one of the greatest museum-arrangers, administrators, and in the best sense "popularizers" that England has known. The sacred traditions of the Hunterian Museum hardly gave him a fair opportunity, although he did much for the collection and toward its rationalization, but the Natural History Department of the British Museum, South Kensington, became in his hands, one of the model museums of the world, not merely a superb collection, but one great illustrated manual of zoology, the pages of which even he who runs may read. No American physician visiting London can afford to miss spending a day in this splendid monument of the genius and organizing skill of one of our colleagues.

An interesting experiment of medical university extension work has just been tried with great success in Chester. The medical men of that city and the adjacent towns formed a class and invited Dr. Sheridan Delepine, Professor of Pathology in Owens College, Manchester, to deliver a course of lectures on bacteriology. These have been well attended and greatly enjoyed, and the plan is to be extended to other subjects and in other districts.

The Medical Defense Union is coining golden opinions in the profession by its efficiency and vigor in defending suits for malpractice brought against its members. Dr. Woodley Stocker writes to the *Lancet* to express his appreciation of the inestimable value of its assistance in winning a suit of this description brought against him in connection with an injured hand. The value of legal counsel with training and experience in this class of cases, the relief from the most crippling part of the expense, and above all the feeling that you have at your back an organization representing the entire profession are worth everything to the victim of one of these suits. Usually he feels that he has the sympathy of the profession—but must fight alone and pay all the costs himself, and that, too, in a trial from which the utmost he has to hope is an acquittal, which probably half the community will persist in regarding as a miscarriage of justice.

The London School Board has reappointed Dr. C. E.

Shuttleworth and Dr. May Dickinson Berry for another year to continue their admirable work in examining defective children and advising as to the best methods of their education.

The annual meeting of the Jenner Institute has just been held and much enthusiasm was manifested at the encouraging prospects opened up by Lord Iveagh's superb donation. The work of the past year was reported as satisfactory and the plans for the future outlined. These are far-reaching, and include reseach work in comparative pathology.

TREATMENT OF TETANUS BY OPIUM.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—Mr. J. F. and grandson were unloading wheat one afternoon at 5 o'clock. The old gentleman reached for a sheaf, and at the same moment his grandson who was looking the other way, ran the tine of a pitchfork into the back of the middle finger of his right hand near the metacarpophalangeal articulation. The wound caused great pain, which became agonizing at 8 P.M., at which time I was sent for. I found the patient livid and gasping for breath. The pain had extended up the arm and to the neck, chest, and heart, the jaws being stiff. One dram of pulverized opium was put in a basin, a pint of boiling water poured on it, and the injured hand being held over the basin, the hot liquid was poured on it with a tablespoon. When a half dozen spoonfuls had been applied the patient experienced wonderful relief. I continued the application for perhaps half an hour, reheating the opium solution several times, and during the night several applications were also made, but no further trouble occurred, and the next day the patient was well, with the exception of some soreness about the hand.

Since then a lady came to see me in regard to her foot which had been injured by treading on a rusty nail two days before. She had suffered great pain, and some stiffness of her jaws was present. When the wound was touched a shock seemed to go through her whole body. A pint of the opium solution was prepared, and her foot immersed in it, the solution being as hot as could be borne. In half an hour the patient expressed great relief. She followed this treatment occasionally for several days, and the symptoms entirely disappeared.

I have treated some half dozen cases of injury of the hands and feet in the same way, with perfect relief in each case. I learned the use of the infusion of opium from the late Professor Nathan R. Smith, while a student at the University of Maryland from 1866 to 1869. It was a favorite prescription with him, and has been likewise with me. I had always used it either warm or cold. The extreme illness of Mr. F. made cooling of the liquid impossible, and thus I accidentally became acquainted with the virtues of the hot infusion of opium. Recent reports of fatal cases of tetanus following slight injuries has prompted the writing of this letter, and I hope that other physicians may have equal success with the above treatment.

JOHN J. LIGGET, M.D.

LADIESBURG, MD., July 19, 1899.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

COMMUNICABLE MALARIAL FEVER — REMOTE PROGNOSIS OF PERICARDITIS—HYDRAMNION IN CASES OF HOMOLOGOUS TISSUES — UNSUCCESSFUL NEURORRHAPHY—A DISCUSSION ON COXA VERA IN ADOLESCENCE.

THE Royal Medical and Chirurgical Society, June 13th, listened to a paper by ROGERS on the eradication of Assam epidemic malarial fever. His view was that this is an intensified form of malarial fever, which after a succession of very unhealthy years, has attained the power of being slowly communicable, usually in an indirect manner, from person to person. The success of his recommendations for the eradication of the disease has confirmed this opinion as to its nature. These recommendations were, briefly, as follows: (1) All newly imported coolies should be placed in fresh lines and not allowed to enter old infected ones; (2) in slightly infected lines all infected persons, together with their households, should be moved out into separate segregation lines and the huts which they have inhabited should be burned and not rebuilt; (3) in badly infected lines all the healthy people should be moved out during the dry cold weather months when infection is at a minimum and placed in new lines, while the infected persons and their households should be segregated and the infected line abandoned.

SEQUEIRA read a paper on the remote prognosis of pericarditis. Recent work seems to show that the pericardium acts as a support to the heart during muscular exertion. If the pericardium is softened and dilated by inflammation this support may be lost, and under severe strain the chambers of the heart may therefore dilate at once. If the pericardium becomes dilated and adherent to the chest wall the effect on the heart of working in a dilated sac may become evident in the direction of lack of compensation. If the pericardium is adherent but not dilated the effect will be small. Clinically the 100 cases which he had examined fell into three groups: (1) those in which there was perfect compensation of the heart; (2) those in which compensation was easily broken; and (3) those in which compensation never occurred. In the first group there were thirty-one cases. All the patients were more than fourteen years of age. The pericardium was undilated: there were no symptoms and practically no physical signs. In the second group there were eighty-six cases. The young patients, and especially young females, formed the bulk. There were all gradations in the severity of the symptoms. Many of the patients were in and out of hospital for years, while in some compensation occurred once only. In the young females (from six to fifteen years old at the time of the acute attack) death occurred on the average in little over two years. In the males, in whom the original attack occurred between the same ages, the average length of life was 3¼ years. The extremes were, of course, very wide of this. In the fatal cases the pericardium was found to be dilated and adherent and the severity of the symptoms depended in a great measure upon the amount of the dilatation. Sequeira had found an interesting re-

lation between the annual increase in the body weight and the age at which death took place in the cases in which the acute attack occurred in early childhood. In the third group of cases, thirteen in number, compensation was never complete. In some this depended upon the fact that the dilatation of the pericardium was progressive. The patients were all young and death resulted in from three to nine months after the acute attack. The effect of concomitant valvular disease and of myocarditis was considered and Sequeira concluded that valvular lesions were of little moment in many cases and that myocardial degeneration could not induce the enormous dilatation of the heart so often observed if the pericardium were undilated. Further, the amount of hypertrophy of the heart in cases of adherent pericardium appeared to be in the main dependent upon the amount of dilatation of the cardiac envelope. Sequeira concluded that he had proved that the amount of dilatation of the pericardium must be taken into account in the consideration of the remote prognosis of acute pericarditis and that influences, such as the increase in the body weight and the amount of muscular exertion, which augment the labor of a heart working in a dilated pericardium, tend to impair the power of compensation.

At the Obstetrical Society, June 17th, WILSON spoke of hydramnion in cases of unioval or homologous twins. Although twins derived from separate ova are nearly seven times more frequent than those derived from a single ovum, hydramnion apparently occurs about as frequently in one class as in the other. The paper was founded on two cases which occurred in his own practice, and on twenty others which he had collected. The history of a case of this kind is that the patient, usually a multipara, at the fourth or fifth month and without any assignable cause undergoes rapid enlargement of the abdomen, which in the course of a few days or weeks leads to extreme distress from the pressure. The affection ends in nearly every case in spontaneous delivery before the end of the seventh month, although in about twenty per cent. labor has to be induced. The contents of the uterus are found to be twin fetuses of the same sex, one of which is decidedly larger that the other, and is enclosed in an amnion containing an enormous excess of fluid. There is a single placenta common to the two fetuses, a single chorion, and two amnia. The heart and kidneys of the larger fetus are hypertrophied, often enormously. Neither fetus shows any malformation and the mother is healthy. The cause of the hydramnion is found in the relation of the vessels of the two fetuses to the common placenta. The twin whose vessels run a shorter or more direct course obtains an undue share of blood from the placenta, in which anastomoses take place between the vessels belonging to the two fetuses. In this way one fetus grows faster than the other and the heart of this one becomes not only absolutely but also relatively larger than that of the other. This leads to an increased secretion from the kidneys, and possibly from the skin and the placenta. The appropriate treatment is the induction of premature labor by puncture of the membranes.

At the British Orthopedic Society, May 27th THOMAS showed a patient in whom the left popliteal nerve had been injured by a kick from a horse, and talipes equinovarus had followed. Neurorrhaphy having failed, tarsectomy was performed with an excellent result.

TUBBY said that it is difficult or impossible to restore a nerve by suture when the division has occurred at or near the point where the nerve breaks up into branches. He further described a case occurring in his own practice in which spastic hemiplegia with flexion of the elbow and wrist and pronation was treated by open section of the flexor tendons, especially the flexor carpi radialis, and detachment of the pronator radii teres from its insertion. A hole was made in the interosseous membrane and the tendon was passed round the back of the radius to its outer border and fixed, thus reversing the action of the muscle. The wrist was kept midway between flexion and extension by means of splints. In six weeks the patient could pick up a pin.

KEETLY opened a discussion on coxa vara. He described types of the two chief varieties which commence in adolescence. The deformity is rachitic in origin. The partial or even total absence of rachitic changes in other parts is no disproof of this, as the older the patient the more localized do rachitic changes tend to be. The various modes of osteotomy which had been carried out or proposed, including a new method, were described. In theory the neck of the bone should be operated on; in practice the trochanteric region is more convenient. Decreased angle of the neck and shaft forms the striking feature at a first glance at the deformity, but the main changes are in the neck itself, especially near the head. In fact, coxa vara is a rachitic deformity of the upper epiphyseal region of the femur. The deforming influence sometimes extends far down the shaft. Compensatory genu valgum is common. The speaker called attention to a peculiar expansion of the facial bones, giving prominence to the eyeballs and width and flatness to the upper half of the face. Coxa vara in cases of early rickets is very common, but cases during adolescence are rare. The commencement of the flood of modern literature on the subject dated from his own paper in the *Illustrated Medical News* of September 29, 1888. The hip-joint is healthy in these cases. For this and for other obvious reasons excision is not justifiable.

LITTLE found great difficulty in accepting the theory that late rickets is the cause. In none of the extremely rickety skeletons in the London museums is anything approaching the deformities depicted by Kocher and others found. It seems to be a process *sui generis*. Charpentie had shown that osteitis may cause the deformity.

SOCIETY PROCEEDINGS.

NORTHWESTERN MEDICAL AND SURGICAL SOCIETY OF NEW YORK.

Stated Meeting, Held March 15, 1899.

THE President, WILLIAM STEVENS, M.D., in the Chair.

SCURVY ASSOCIATED WITH MEMBRANOUS COLITIS.

DR. J. H. FRUITNIGHT: I have recently had under

observation a case of scurvy occurring in a boy, eight years of age, the child of wealthy parents. He had been allowed to eat a great deal of salt meat and salt smoked fish, these forming his principal diet, for he would not eat potatoes or any other vegetables. The disease showed itself first by pain about the joints, particularly near the knees, ankles, and wrists; ecchymotic spots also appeared in the neighborhood of these joints. The gums soon became spongy and bled easily. Child also complained of great pain over the region of the descending colon which seemed to indicate some intestinal disorder. An enema was given and this brought away a strip of membrane six inches in length, stained with blood, with the result that the abdominal pain ceased. The intestinal trouble lasted about ten days, the temperature reaching 103° and 104° F. My theory is that there was a submucous extravasation of blood in the colon, analogous to the ecchymoses in the skin, and that this had caused the membrane to be exfoliated. The scurvy symptoms disappeared rapidly under the administration of orange-juice and the child is now well.

DERMOID CYST REMOVED FROM A YOUNG CHILD.

DR. JOHN F. ERDMANN: I recently saw a child, one year and one month old, who had a small tumor above the left external angle of the frontal bone, directly over the outer edge of the orbit. It was the size of a filbert, and was movable only in a transverse direction, being evidently partly bound down by adhesions, etc. A tentative diagnosis of dermoid cyst was made. The tumor, subperiosteal in position, was removed and proved to be a cyst filled with cheesy and fatty matter containing half a dozen hairs from one-half to three quarters of an inch long.

Not long ago I was called to a see a young man, twenty-two years of age, who was suffering from appendicular colic, this being his fifth or sixth attack. All the evidences of acute appendicitis were present. The peculiar feature of the case was the fact that the pulse-rate was slow, only 55, in spite of a subnormal temperature, 97° F. The former, however, was of good volume and the general facial expression was not that of shock. Palpation revealed an appendix about as long and as large as my middle finger. During the next twenty-four hours the pulse increased five or six beats per minute, and the temperature became normal. At the end of forty-eight hours the pulse was only 68, a condition of tachycardia with appendicitis. Symptoms having moderated operation was advised at a later date. A week later I opened the abdomen and found an appendix 3½ inches in length with a stricture 2 inches from the tip, and a large mucus inclusion. The patient made a good recovery.

DR. C. A. LEALE then read the paper of the evening, entitled

SEROUS CEREBRAL APOPLEXY.

This he described as a condition characterized by the rapid effusion within the brain or its membranes of the serum from the blood circulating within the cranial cavity. It may also be associated with a rupture of a blood-vessel and extravasation of blood, in which case it becomes one of serosanguinous apoplexy.

When simple, idiopathic apoplexy occurs not a drop of blood escapes, only serum is found, and there are apparently no other pathological evidences present in the brain or the surroundings; or a general cerebral edema may be present, similar to the "wet brain" of the paretic, due to interstitial effusion of serum and atrophy of the brain to make place for the serum. A sudden increase of this effusion may be caused by cerebral congestion, intense mental strain, great emotion, rapid dilatation of the stomach, etc., and sudden unconsciousness, or profound coma may supervene. If the patient be promptly and properly treated, he may quickly recover, or he may gradually decline until death ensues. The first symptoms usually noticed are, profound nausea accompanied by attempts at vomiting, when the contents of the stomach may be sucked into the larynx or trachea and cause suffocation. In serous cerebral apoplexy the patient falls suddenly, the face becomes pale and the hands cold and clammy; or in exceptional cases of the cyanotic type, the face becomes red, and the blood-vessels turgid. In some cases the brain retains its power, but usually its function is impaired and unconsciousness follows. In others cases there may be such a degree of cerebral edema and localized intracranial pressure that hemiplegia or general paralysis follows. The great danger in serous cerebral apoplexy is that the feeble heart will cease to continue action. Therefore the head should be kept low, the body at rest, and moist heat should be applied to the brain. If necessary forcible respiration must be employed. With this treatment the patient will usually so far recover that in the course of an hour he can be moved to a place of comfort, if still kept continuously in a prone position.

The author cited several cases of serous cerebral apoplexy, and one in a man, sixty years of age, who was suddenly stricken with serosanguineous apoplexy while quietly reading. He immediately became unconscious and soon passed into a state of profound coma. The condition of the patient was alarming and did not differ much from that of a man suffering from simple serous cerebral apoplexy. The man died without recovering consciousness, and an autopsy showed a very minute rupture at the circle of Willis. The opening was so small that it seemed almost impossible that death could have been caused by the small amount of blood extravasated. But in addition, a large quantity of serum was found at the base of the brain, and to the presence of the latter was attributed the profound coma which preceded and was the direct cause of death.

Cases of serous and sanguineous cerebral apoplexy are of frequent occurrence and are attributed by the author to heart and kidney diseases, to the conditions under which business men of the present generation live, and to the rush, worry, and mental strain to which they are subjected. He emphasized the importance of examination of the eyes, as premonitory symptoms of the conditions may there be indicated weeks before an attack occurs. These are shown by redness of the conjunctivæ, involuntary tears running down the cheeks, and increased intra-

ocular pressure. He considers such an examination of greater importance than urinalysis.

DR. EDWARD S. PECK: In regard to the ocular and intra-ocular symptoms which have been emphasized by the author, there can be no doubt that these exist. I have made a few examinations of the fundus of the eyes in these cases and have found a circumscribed perioptic effusion nicely limited to the region about the optic nerve. The condition is not an optic neuritis or an inflammation of the retrobulbar portion of the optic nerve, but in appearance is more like a hyperplasia of the retina itself. Usually, vision is not at first interfered with. The condition, as a rule, is present in both eyes and ultimately ends in optic-nerve atrophy. Some years ago I saw a man who was suffering from Bright's disease. He was attended by a prominent medical practitioner, who had not recognized the disease, and who treated him for nausea and acute dyspepsia. I examined his eyes and found this very marked infiltration about the optic nerve, together with the peculiar condition of the nerve stem and macula, and gave the opinion that the man had only a short time to live. In two weeks he was dead. In two other cases I was able to predict early death after making an examination of the eyes and noting this condition. One of these cases was an acute Bright's disease, and the other a serous apoplexy.

DR. S. N. LEO: I have seen many cases of cerebral apoplexy in people of advanced life, and there is no doubt that the premonitory symptoms referred to in the paper are often overlooked. I recall having made an autopsy in a very interesting case at the Colored Home some years ago. Two of the inmates had had an altercation and it was alleged that the dead man had been violently struck on the head by his comrade. I found a magnificently developed man, fifty-nine or sixty years of age, but there was no mark or abrasion on his head or anywhere else on the body. As it was said that the man had bled from the ears I thought there might possibly be a fracture at the base of the skull. I made an incision well down below the occipital protuberance; the skull was exceedingly thick. After I lifted the pia mater and reached the arachnoid I noticed quite a large blood-clot under the pons, and another under the optic tract. Both were quite hard, showing that they had been formed some time. In addition I observed an immense effusion in each ventricle. There was no sign of a fracture. It was further found that the man had advanced Bright's disease. The only conclusion which could be reached was that the man had died of an attack of apoplexy, such as has been so graphically described by Dr. Leale. I am of the opinion that the condition is largely superinduced by advanced disease of the kidney and by senile degeneration. I do not think, however, that the short-necked man is especially apt to have apoplectic seizures.

DR. ROBERT NEWMAN: We have all seen the cases described by the author. The serous form of the disease is not so dangerous as the sanguineous because in the former there is no blood-clot to be absorbed. Many of the patients recover without treatment. I do not attach much importance to the premonitory symptoms for the reason that the attacks occur suddenly and unexpectedly, as a rule. In regard to the treatment of sanguineous apoplexy, it is doubtful if much can be done. Rest and efforts of Nature will do most. However, I would like to ask the author whether he thinks that the iodid of potassium has a good effect in promoting absorption. In these cases the prognosis largely depends upon the degree of paralysis which usually exists to a greater or less extent.

DR. J. BLAKE WHITE: In my experience it generally occurs that the serous form of apoplexy manifests itself more slowly than the sanguineous variety. The brain is tolerant of a slight degree of effusion, and the symptoms become alarming or fatal in proportion to the amount of effusion and its interference with function. I agree with Dr. Leo that short-necked individuals are not especially prone to this type of apoplexy but rather to the sanguineous or mixed variety. It is usually seen in persons broken down by chronic disease and in a cachectic condition occurring as a secondary affection. An ophthalmological examination I can understand would assist very much in making an early diagnosis in these cases, and I am in accord with the views of the author that good results might follow if this precaution were taken.

DR. ROBERT H. GREENE: I would like to say a word as to the prevention of most forms of apoplexy. It seems to me that heredity plays a strong part in the causation of this condition, for in most cases the parents of the patient have suffered from atheromatous changes in the blood-vessels at an early age. These changes often take place at an earlier age than is required by the laws of Nature for one reason, because individuals are so apt while perhaps exercising their brains to exercise their bodies too little. If persons who are predisposed by heredity to this condition would exercise every day methodically to the point of perspiration, their arteries would not break down as early. It is an established fact, determined by microscopical examination, that these degenerative changes begin in the muscular coat of the blood-vessel.

DR. S. H. DESSAU: In regard to the differential diagnosis of serous and sanguineous apoplexy, I would like to ask the author if hemiplegia is ever present in the former condition, or whether it is pathognomonic of the more severe form of apoplexy only. As the treatment in each is different, it is rather important that the two conditions be differentiated.

DR. J. H. FRUITNIGHT: The term serous cerebral apoplexy is seldom used nowadays and modern writers have omitted it from their books. In sanguineous apoplexy a change has previously taken place in the arteries, usually as the result of age, but not always. "A man is as old as his arteries" is a trite saying for even in young men we see changes in the arteries as a result of syphilitic degeneration, the well-known syphilitic endarteritis which often terminates in cerebral apoplexy. It seems to me that serous apoplexy may be considered rather as the result of a toxemia and occurring most frequently as a concomitant of the so-called uremia of chronic nephritis.

DR. A. M. JACOBUS: I desire to ask the author whether there are any records of autopsies made in cases

of serous cerebral apoplexy, and, if so, whether or not evidences of cerebral hemorrhage, embolism, or thrombosis were found. I would also like to know what are the differential points in diagnosis between the so-called serous cerebral apoplexy and the other forms.

THE PRESIDENT: The paper contains many interesting points. I agree with Dr. Greene in what he has said about heredity being a causative factor. I was especially impressed by the truth of this some five or six years ago when I saw in consultation a case of this kind. The patient was a middle-aged man, and upon inquiring into the family history I learned that five of his brothers had died suddenly at or about the age of forty-eight. I predicted that he would not live more than twenty-four hours, and such was the case.

I would like to hear the author say something about hemiplegia in these cases, and also in regard to the use of iodid of potassium to favor absorption, as suggested by Dr. Newman.

DR. LEALE, in closing: In regard to treatment, I find that no remedy acts so well in relieving this condition as elaterium. It has a marked hydragogue effect, and causes a rapid pouring out of serum into the intestinal tract, and thus relieves the congestion in the brain. Rapid resorption of the serum then follows from all the cavities in which the serum lies. I have known two or three gallons of fluid to pass from the gastro-intestinal tract. Sometimes elaterium causes vomiting of fluid in consistency very much like the rice-water discharge of Asiatic cholera. The iodid of potassium, or the iodid of sodium, which is better borne, may be administered at a later period to complete absorption. Pilocarpin, which will produce profuse sweating within eight minutes is sometimes beneficial, but the objection to its use in serocerebral apoplexy is that it depresses the heart. It should never be employed if there is much intracranial blood-pressure with atheroma. The all important pneumogastric nerve must always be considered and the teachings of physiology remembered.

Hemiplegia, as a rule, does not occur in serous cerebral apoplexy, for the reason that in this condition there is an equalized pressure upon the brain and not a localized pressure at any one point, as is the case in cerebral hemorrhage. But there may be a modified form of general paralysis, which generally passes off within twenty-four or thirty-six hours after the patient has been stricken.

I have known a man stricken with serous cerebral apoplexy to remain unconscious for hours, yet be apparently well within a week.

The term serous cerebral apoplexy is an old one and recent writers continue its use.

We live in a time which produces men who die suddenly. The New York business man lives under a tremendous pressure. Merchants, lawyers, clergymen, and doctors are all struggling for an existence and eminence. The pressure of life is so intense and the mental exertion is so great that it is easy for me to understand why we see so many cases of serous cerebral apoplexy and sudden death.

THE NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held Thursday, May 18, 1899.

THE President, DR. WILLIAM H. THOMSON, in the Chair.

The first paper of the evening, on

RECENT METHODS OF LOCAL ANESTHESIA FOR MINOR AND MAJOR SURGICAL OPERATIONS,

was read by DR. ALEXANDER B. JOHNSON. He said that the main advantage of local over general anesthesia is that it involves less risk. If local anesthesia could always be made absolutely painless this would be true. The shock and worry of operation during consciousness, however, and the pain it gives during and after operation are serious objections in many cases.

In acute inflammatory cases the application of local anesthesia means a good deal of pain and there is a dull ache afterward that seriously disturbs the patient. In addition the infiltration of the tissues by the anesthetic may interfere with primary union. At times the dissection of the tissues during the operation must unexpectedly be carried deeper than was anticipated, good anesthesia is hard to secure in the depths of the wound, the surgeon is disturbed, and his technic and the completeness of the operation is apt to suffer.

At times, moreover, patients have an idiosyncrasy for cocain and excitement develops even after the employment of but small amounts. It may develop without warning, and this point must be carefully borne in mind by the surgeon. When marked idiosyncrasy exists, even small operations cannot be performed with local anesthesia, but even in milder forms the field of application for local anesthetics is very limited. It was thought that most of the pneumonia that developed after operation would disappear on the use of local instead of general anesthesia, with its consequent irritation of the pulmonary mucous membrane. This, however, has not proved to be the case. Though more limited in application than was hoped at first it would be, local anesthesia is of distinct service. It may be employed with advantage in the surgery of the skin, the hand, the foot, the mucous membrane, the eye, for such operations as the wiring of the patella, the tapping of the knee-joint, urethrotomy, the resection of a rib, and the like. In major operations it is apt to impair operative technic and unless there is some special reason it should not be employed. In gastrostomy and in the operation for cancer of the esophagus, when it is necessary to avoid vomiting afterward, local anesthesia may be properly adopted. The speaker had seen cruel operations performed under local anesthesia, but it requires the utmost coolness on the part of the operator, and a certain hardness of feeling not often possessed by the surgeon.

As to the means for local anesthesia ethyl chlorid serves a good purpose in superficial work, for skin incisions, or for needle insertions. The two great local anesthetics for introduction under the skin are cocain and eucain. The latter is growing in favor. For mucous membranes, as in the mouth, it is better to paint the site of operation with a strong solution, using a camel's-hair brush, rather than to spray the whole cavity. Symptoms

of intoxication often develop suddenly and without warning and are to be guarded against. In the urethra, local anesthesia may be secured by irrigation, the urethra being filled with a 5-per-cent. solution, which is allowed to remain for one minute. It is claimed that half an ounce of a 5-per-cent. solution will produce satisfactory anesthesia of the bladder, but the speaker said he had had no experience with this procedure. In the urethra special care is needed to guard against intoxication. Around the face sudden symptoms of intoxication sometimes develop. He had once seen 5 minims of a 4-per-cent. solution introduced into the supra-orbital region for neuralgia produce alarming symptoms. In another case 6 minims of a like solution had a similar effect.

In acute inflammation the pain is lessened by injecting the anesthetic around the inflamed area. In operations upon the hands and feet a rubber ligature should be applied at the wrist or ankle or on the fingers or toes. The free bleeding afterward removes the cocain and much more of it can be used. It must be remembered, however, that the application of a ligature is painful and gives rise to bitter complaints afterward. Injections made over the course of a nerve, as at the side of the finger, make the area of its distribution anesthetic.

Schleich of Berlin adds the well-known anesthetic effect of tension to that of the drugs employed. His solution contains a minimal quantity of cocain and a certain amount of morphin, besides common salt. The morphin, however, is of no advantage as it has no local anesthetic effect. There are certain objections to Schleich's method, as the number of needle punctures necessary are annoying to the patient and bothersome to the surgeon. The forcing in of fluid into an inflamed area may lead to the spread of infection and the tension on the tissues conceals anatomical details.

Eucain solutions have the advantage over cocain solutions that they may be boiled. Cocain breaks up if heated to the boiling-point. There are some other substances that have been used and recommended but clinical experience with them is not extensive enough to justify a definite conclusion as yet as to their efficiency and value. Among them the most prominent are eucain "a", certain derivatives of guaiac and orthoform. None of them is capable of replacing cocain or eucain.

In the discussion which followed DR. HOWARD LILIENTHAL said that two years ago he would have agreed with the essayist as to the very limited field there is for the use of local anesthesia. Now, however, he felt differently. He learned to distrust cocain but now trusts eucain. As for pain with local anesthesia, patients often fear that they are about to be hurt and complain very much. The best proof, however, that they do not suffer actual pain is that they do not move. Cocain is especially dangerous because it depresses the heart. He had seen 4 minims of a 5-per-cent. solution injected for the removal of a wart produce serious symptoms. Eucain, on the contrary, is a heart stimulant. Five grains may be used in the case of a feeble subject and as high as 10 grains has frequently been used without evil result. Eucain causes an unpleasant, painful feeling afterward. This may be relieved by packing the wound with orthoform gauze. That operations under eucain are painless, the fact that physicians have come back to have boils opened under it seems sufficient proof. A method not sufficiently employed by surgeons, though well known to dentists, is the cataphoresis of cocain. He had had sensitive dentine removed in this way absolutely without pain.

Eucain should not be employed with a constrictor as it is liable to cause necrosis. For even serious operations eucain local anesthesia suffices very well. In three cholecystomies no pain was felt except that occasioned by pulling on the gall-bladder in bringing it up to attach to the skin incision. In operations for stranulated hernia the drug does very good service and he had used it very satisfactorily in operations for the radical cure of hernia.

A hypodermic injection of morphin, ¼ to ½ of a grain according to the patient's condition, relieves the mental strain and should be given a few minutes before the operation. If in the course of the dissection a nerve is met with a tiny drop of the solution should be injected directly into it. There need be no hesitation to give chloroform if it should be considered advisable after having tried eucain as the drug is stimulant not depressant.

DR. BATES said that cocain does not always produce local anesthesia satisfactorily for eye work. In operations on the muscles especially, pain is often complained of. When anesthesia is good a blanched appearance follows the use of cocain. In certain patients hyperemia of the parts developed and in these pain would always be complained of. In most of these cases the use of extract of suprarenal capsule used in conjunction with the cocain would produce the desired capillary closure with blanched appearance and anesthesia. The mental condition is important, however, and in excitable, neurotic patients, even with extract of suprarenals one is not always sure to obtain good local anesthesia.

DR. JOHNSON said that he is not a pessimist as to local anesthesia. He uses it every day in dispensary and office practice. There is a good deal of pain associated with the use of local anesthesia and especially after the operation is over. As to neglecting a patient's complaints there are surgeons who can and still do justice to their work, but he cannot, and a squirming, complaining, patient makes him hurried and not as exact and careful as he would otherwise be.

The second paper, entitled

FURTHER EXPERIMENTAL RESEARCHES ON THE EFFECTS OF DIFFERENT ANESTHETICS UPON THE KIDNEYS,

was read by DR. ROBERT COLEMAN KEMP. It contained the report of a series of exact observations upon the kidneys of animals in which an oncometer had been used to determine the varying size of the kidney and the amount of blood going to it at any time, while section of the ureter showed the amount of urine being excreted. Ether gave a characteristic oncometric curve with a persistent fall in blood pressure in the kidney and diminution of the amount of urine passed. This was markedly different from the effect of any other anesthetic and even in anesthetic mixtures the presence of ether could be de-

tected by its effect on the oncometric curve. As the ether was pushed urine became less and less in amount and more and more albuminous, and finally suppression of urine resulted.

Chloroform depressed the heart and consequently the kidney circulation, but albumin did not occur so abundantly and the decrease in urine was only proportionate to the decrease in general blood pressure. There was no specific effect of the chloroform upon the kidney as was the case with ether and urinary suppression did not occur.

The A.C.E. mixture, in the proportion of 1, 2, and 3 by volume of alcohol, chloroform, and ether, acted differently according to circumstances. If air were freely admitted then the ether seemed to be without effect, and only the same effect as that produced by chloroform was noted. Without free admixture with air the ether kidney developed.

Schleich's anesthetic mixture was found to be especially severe on the kidneys, an emphasized ether kidney resulting very soon, with suppression of urine. No variation of this result was noted when curara was administered. Nitrous oxid had the least direct influence. The circulation was slowed but immediately restored on withdrawing the gas. No specific effect was observed on the kidneys, and the effect noted was evanescent with rapid return to normal.

Anesthol, Dr. Willy Meyer's proposed variant of Schleich's anesthetic mixture, is especially dangerous. Bloody urine occurred and complete suppression of urine set in very soon after the beginning of the anesthesia. The blood-clots could be traced up into the pelvis of the kidney so that the irritation was of the secreting substance of the kidney.

His conclusions were as follows: As far as their effect upon the kidneys are concerned Schleich's anesthetic mixtures and anesthol are most dangerous, ether comes next, producing a specific effect on the kidneys, chloroform is less hard on the kidneys, and nitrous oxid affects them least. Some of these conclusions have been confirmed by clinical experience. After an anesthetic more than half the patients have albuminuria when there was none before. Lawson Tait has pointed out that with chloroform the danger from the anesthetic was immediate but with ether it was subsequent in the danger from pneumonia and uremia.

The third paper, entitled

TECHNIC OF ADMINISTRATION OF ANESTHETICS TO PATIENTS SUFFERING FROM KIDNEY TROUBLES,

was read by DR. THOMAS L. BENNETT. He does not consider a passing albuminuria even with a few hyalin casts as especially significant. They are not always due to the anesthetic but may be found also after operations where no anesthetic was employed. Exposure of the patient during an operation seems to have this irritant effect upon the kidneys and great care should be exercised in keeping the patient covered especially when a kidney lesion exists. Then the patient should be transferred as soon as possible after the operation to a heated bed in order to arouse the skin to action. Operations on the genito urinary tract seem to affect the kidneys reflexly and require special precautions as to anesthetics and care for the warmth of the patient.

In the order of their influence on the kidneys anesthetics may be arranged about as follows, beginning with the least harmful: (1) Local anesthesia. (2) Nitrous oxid with oxygen. (3) Nitrous oxid with air. (4) Chloroform. (5) Ether. Of any of the general anesthetics in a nephritic patient the smallest quantity possible should be used. Only analgesia, not complete anesthesia, should be sought. The conjunctival reflex should not be abolished, pupillary activity should remain, and other reflexes, and even soon slight pain, may be allowed to be present.

Nitrous oxid is the least harmful but the state of asphyxia it produces causes a passive congestion. If air is mixed with it the asphyxia is less, but the anesthesia is not so good. When mixed with oxygen, as Hewitt has suggested, it is least harmful. A special bag, with a diaphragm and a mixer for the two gases, is employed and the effect is very different to that seen when ordinary nitrous oxid is employed. It must be confessed, however, that certain subjects fail to be brought under the influence of the anesthetic sufficiently to permit of surgical operations. In some cases, too, vomiting occurs after nitrous oxid, and the after suffering is often great because of the prompt revival from the anesthesia.

DR. MELZER, in the discussion, said that he considers the action of ether upon the kidney scarcely as a specific one. Caffein has just the opposite action upon the circulation to that of ether. There is first a fall of blood pressure and then a rise, so that it becomes an interesting question as to whether caffein would compensate for ether. In case of suppression of urine, he has found salicylate of soda effective in restoring urinary secretion. The double salicylate of caffein and soda would seem to be especially indicated.

DR. ABBE said that despite the experimental results obtained he would trust to ether as an anesthetic. In a number of cases examined at St. Luke's Hospital albumin and casts had been found in the urine after ether anesthesia, but they were hyalin casts and disappeared after a day and practically no significance should be attributed to them. Even repeated administration of ether does not produce nephritis, and no lasting damage seems to be done to the healthy kidney. He also has seen good from the use of salicylate of soda in urinary suppression. In a case of pyuria he saw excellent results follow its administration. While in certain cases with only diminished urinary secretion not much effect seemed to follow its use he thinks it well worth further careful clinical observation.

It would be unfortunate if a diminished confidence in ether should follow the observations made in these physiological studies for ether is our most trustworthy anesthetic. The exposure of the patient during operation is important in its influence on the kidneys, but not the anesthetic ordinarily.

DR. J. E. KELLY said that mixtures of anesthetics seem to combine all the disadvantages of their ingredients. Some of the more recently suggested mixtures would seem theoretically at least in this regard to be per-

fect death-dealers. As for himself he prefers chloroform as an anesthetic. He has seen two deaths from chloroform anesthesia both of which he considers could have been justly attributed to careless anesthetists. He has seen five or six deaths in ether anesthesia, and only once was the anesthetist at fault.

DR. KEMP, in closing the discussion, said that an important element in the effect of an anesthetic upon the kidneys is the susceptibility of the patient to irritants—his personal equation. For this it is advisable to know some details of his previous life and his tendency to react to exposure and the like.

REVIEWS.

THE SERUM DIAGNOSIS OF DISEASE. By RICHARD C. CABOT, M.D. Physician to Out-Patients, Massachusetts General Hospital, Boston. New York: Wm. Wood & Co., 1899.

THIS volume adds little that is new to our knowledge of serum diagnosis; nor can it be regarded as a very practical laboratory guide. The author plainly disavows any such claims for his work. He states in his preface: "This book is nothing but a compilation. Its aim is to bring together in convenient form the results of the immense amount of work which has been done in serum diagnosis since 1896." With this sole purpose in view the author has presented in a clear and condensed form the results of the work of himself and others in the experimental and clinical study of serum reactions in typhoid fever, cholera, leprosy, tuberculosis, etc., these results being conveniently classified, compared and reviewed. The review is not very critical, however. The greater part of the book is devoted, as might be expected, to the Widal reaction in typhoid fever.

Both as a condensation of the literature of the subject and as a bibliographical reference, the work is of distinct value. It is well printed and freely illustrated.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART A. HARE, M.D. Vol. II. June, 1899. Philadelphia and New York: Lea Brothers & Co.

THE second number of the new quarterly shows that the high standard already established and so well justified by the contents of the first volume is maintained and further substantiated. Dr. Coley presents an excellent up-to-date review, especially of the three subjects of greatest practical interest in abdominal surgery just at present: the surgery of the gall-bladder, of radical operations for hernia, and for appendicitis. In the surgery of the biliary tracts the recent work of Rehr in Germany and Mayo Robson in England has been most encouraging. It is evident that a great development in biliary surgery is about to take place and that active interference early in the case will replace the expectant methods that have been adopted up to this time.

In the review of the recent work on the radical cure of hernia Kocher's methods and results especially are detailed and commented on. In the last five years none of his patients have died and in no case in which Kocher himself has operated in recent years has there been a relapse.

The review of the literature of appendicitis is very interesting especially because it brings out the fact that the subject is now as much discussed abroad as it has been here in America for the last few years. Czerny's view that the first attack of appendicitis belongs to the physician is the expression of an ultra conservative, as practically all are agreed that appendicitis is now from the very beginning a surgical affection.

Dr. Clark in "Gynecology" presents a very interesting review of the recent experimental work done on the transplantation of the ovaries. There would seem to be possibilities ahead in this subject that may lead to important and very practical developments. With regard to that very interesting subject, the occurrence and prevention of ventral hernia after operation, some very striking facts are brought out. For instance, it is clear from Abel's investigation of the case of Professor Zweifel, the head of the the Gynecological Clinic at Leipzig, that a number of prejudices are unsubstantiated by actual experience. Abel succeeded, with what painstaking patience may be well imagined, in getting the after histories of all but five of nearly 700 patients. From his statistics it would appear that the wearing of a bandage has absolutely nothing to do with the prevention of hernia, and the time of resumption of active work by the patient stands in no causal relation to the production of the lesion. There is abstract of the discussion between Behrens of Berlin an and Professor Neisser of Breslau on the treatment of gonorrhea in women in which Neisser's plea for active germicidal treatment rather than that by simple astringents is commended and his recent declaration of faith in ichthyol for this purpose commented on favorably.

We are tempted to say more about the good things in this number and cannot close our review of it without at least a reference to Dr. Stengel's very interesting abstract of recent work on the relations between diabetes and glycosuria and Dr. Jackson's excellent review of the recent literature of the toxic amblyopias.

URINARY ANALYSIS AND DIAGNOSIS by Microscopical and Chemical Examination. By LOUIS HEITZMANN, M.D. With 108 Original Illustrations. New York: William Wood & Co., 1899.

THE meritorious feature of this new manual of urinary analysis is its illustrations, all of them original. The plates showing the different forms of cells that occur in urine, with their probable origin, are especially interesting. The clusters of fattily degenerated epithelial cells, with their abundant content of bacilli and cocci, which constitute smegma, and which occur so often in the urine of females, have not before been so fully described or so characteristerically illustrated as they deserve. There is, perhaps, a tendency noticeable in the book to claim too much for the possibilities of recognizing microscopically the site of origin of the various forms of epithelial cells, but the fault is in the proper direction, for, as a

rule, diagnosticians do not make sufficient use of the histological indications furnished them by the various cells that occur in urinary sediment. In this respect the book is a distinct advance on handbooks of urinary analysis generally. The characteristic microscopic picture of the urinary sediments of such conditions as acute and chronic prostatitis, of spermatocystitis or seminal vesiculitis, and of chronic catarrhal vaginitis are interesting and suggestive, even though one may not be prepared to go as far as the author in enthusiastic claims for the diagnostic usefulness of the microscope in these conditions. On the whole, the book is one of the best of its kind and is thoroughly up to date.

MATERIA MEDICA AND THERAPEUTICS. An introduction to the Rational Treatment of Disease, for the Use of Students and Practitioners of Medicine. By J. MITCHELL BRUCE, M.D., F.R.C.P., etc., Physician and Lecturer on Medicine at Charing Cross Hospital, London. Sixth Edition, revised and enlarged. Philadelphia and New York: Lea Brothers & Co., 1899.

THIS work appears in the same compact form which (together with its scientific value), made it in the first edition so popular among American, as well as among English, students. Changes have been made in the text to adapt it to the new British pharmacopœia and to make it representative of recent advances in our materia medica. There is no reference, however, to those of our newer drugs which, though unofficinal, are well deserving of mention in a book of this character.

The discussion of the various remedies is admirably divided; *e. g.*, in the separate treatment of "immediate local actions," "actions on the blood and specific actions," "remote local actions," etc. We cannot bestow as much praise on the general grouping of the remedies. We believe that a change from the chemical and botanical classification to the more rational arrangement according to physiological effects would have marked a distinct improvement in the new edition over the first one. The adopted subdivision robs the work of much of its value as a reference for the physician, and fails to present the pharmacopœia in an impressive *therapeutic* review to the overtaxed memory of the student.

The text, however, is interesting, so far as that of a condensed hand-book on materia medica can be. Unessential details are omitted and salient facts are tersely and unequivocally presented. One of the most attractive features of the work is the interesting and scholarly division devoted to general (and we might add special) therapeutics.

ELECTROHEMOSTASIS IN OPERATIVE SURGERY. By ALEXANDER J. C. SKENE, M.D., LL.D., Professor of Gynecology in the Long Island College Hospital of Brooklyn, etc. New York: D. Appleton & Co., 1899.

THE author of this book has been an advocate of electric hemostasis in surgical operations since he first learned its usefulness. In the present work he presents an elaborate review of the subject including a description of the essential instrument and macroscopic and microscopic examinations of tissues burned with the electric cautery. It is this chapter which will most interest surgeons since it gives the *raison d'être* of this method of controlling bleeding in surgery. Dr. Skene shows that by means of the cautery the lumen of an artery becomes entirely obliterated; that after two hundred trials no secondary hemorrhage ensued; that an artery a quarter of an inch in thickness was reduced to about one-twelfth of an inch in thickness and that the tissues were rendered amorphous by the heat and pressure. The treatment of friable tissues which cannot be ligated, and the closure of canals lined with mucous membrane, and the sterilization of the parts as well, can be accomplished better by this means than any other. The author finds that pain is diminished by this method of hemostasis on account of the devitalization of the nerves severed. The remainder of the book is taken up with chapters on the use of the electric cautery for hemostatic purposes in the various branches of surgery, and two chapters on aseptic and antiseptic surgery. As a pioneer in this field of surgical technic the book is interesting and deserves careful reading by every man engaged in surgical work.

THERAPEUTIC HINTS.

The Addition of Chloroform to Alcoholic Solutions of Bromoform renders them miscible with water in any proportion, whereas the bromoform would otherwise be precipitated by the water. For instance:

℞	Bromoformi	*m.* xviii
	Chloroformi	*m.* xii
	Rum q. s. ad.	℥ ii.

Application to a Cancerous Cervix.—

℞	Orthoformi	gr. xv
	Ac. arseniosi	gr. iss
	Spiritus, Aquæ aa	ʒ ii.

M. Sig. Saturate a tampon with this solution and apply to cervix.

For Pertussis.—The following is the formula prescribed by MORITZ COHN of Hamburg from which he claims excellent results:

℞	Bromoformi	*m.* iij–xii
	Absolute alcohol	*m.* x–xl
	Pulv. acaciæ	gr. lxxx–ʒ v
	Syr. aurantii	℥ ss
	Aq. dest. q. s. ad.	℥ iv.

Dissolve the bromoform in the alcohol, triturate carefully with the acacia and gradually add the syrup and water. Sig. One to two teaspoonfuls every two hours. Keep in a dark bottle and shake well before using.

For Infectious Infantile Diarrhea.—

℞	Laudanum of Sydenham	gtt. ½
	Ac. hydrochlorici dil.	gtt. ii
	Sugar water	ʒ v.

M. Sig. Give at one dose. Repeat several times a day if indicated.